

The 2002 Annual Report of *Boreal Partners in Flight*

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INTRODUCTION

The 11th year of *Boreal Partners in Flight (BPiF)* was another productive time for our group. The year 2002 has brought new partnerships with ecologists and natural resource managers from Canada, temperate U.S., and Mexico and solid progress with the evaluation and implementation of our broad-scale inventory and monitoring programs. Some modest progress was also made in addressing priority issues of conservation concern.

This year we had a unique opportunity to hold our annual meeting jointly with the *Partners in Flight (PIF) British Columbia/Yukon Territory* group (see below) and in conjunction with a meeting on international conservation organized by the Western Working Group of *PIF* and a workshop on Monitoring Boreal Landbirds sponsored by the Canadian Wildlife Service. The meetings in Whitehorse helped broaden our perspective on the problems that face landbirds breeding in boreal North America and provided us a chance to learn more about our colleague's efforts to address important conservation issues across the annual ranges of the populations we share. I hope that the information exchange and new contacts made will result in new collaborative studies that benefit North America's birds. Some collaborative projects between Alaska and Canada are already underway or are currently being planned. For example, we are currently completing an evaluation of the Monitoring Avian Productivity and Survivorship (MAPS) program in Alaska and adjacent Canada (see below) and are hoping in 2003 to initiate a similar evaluation of Migration Monitoring Programs in Alaska and British Columbia.

This past year we made good progress on refining the Alaska Off-road Point Count Program and have brought this program closer to implementation (see below). We hope to launch a pilot field study in 2003 to evaluate and refine the proposed sampling design and field methods. We plan to broaden the program in the future to include intensive inventories of individual land units that can be accomplished over a 5-year period. Also, we will be pursuing regional funds to support participation by all of the U.S. Fish and Wildlife Service National Wildlife Refuges.

Finally, in 2002 we continued to make modest headway on addressing high priority conservation issues through the examination of the effects of forest harvest on birds on the Tongass National Forest and Tanana State Forest, the inventory and monitoring of bird populations breeding in riparian habitats in southeast Alaska (see below) and along the lower Yukon Rivers (see below), and the continued study of bill deformities among terrestrial birds in south-central Alaska (www.absc.usgs.gov, click chickadee alert).

I am sure that 2003 will be another successful year for landbird conservation in Alaska. I sincerely thank everyone that provided information included in this report and wish you all the best of luck with your field endeavors in this year.

Steve Matsuoka

Current leadership for *Boreal Partners in Flight*

Steve Matsuoka, *Program Chair*

Andrea Swingley, *Outreach and Education*

John Wright, *Raptor Conservation*

BIRD CONSERVATION REGION COORDINATORS

Rob McDonald and Brian McCaffery, BCR 1&2, *Western Alaska and Aleutian/Bering Sea Islands*

Dave Yokel, BCR 3, *Arctic Plain and Mountains*

John Wright, BCR 4, *Northwestern Interior Forests*

Michelle Kissling, BCR 5, *Northwest Pacific Rainforest*

INVENTORY AND MONITORING COORDINATORS

Steve Matsuoka, *North American Breeding Bird Survey*

Colleen Handel, *Alaska Off-road Point Count Program*

vacant, *Migration Monitoring*

Steve Matsuoka, *Monitoring Avian Productivity and Survivorship*

Carol McIntyre, *Owl Monitoring Working Group*

UPCOMING MEETINGS

The Raptor Research Foundation 2003 Annual Meeting. *September 3-7, 2003, Hilton Hotel, Anchorage, Alaska.* Abstracts for oral and poster presentations on any aspect of raptor biology, ecology, conservation, or management are welcome. Deadline for presentation abstracts is **1 June 2003**. Details and instructions will be posted on-line (URL: <http://www.alaskabird.org>) as they become available. An all-day INTERNATIONAL SYMPOSIUM ON THE ECOLOGY AND MANAGEMENT OF NORTHERN GOSHAWKS will be held in conjunction with the conference. The goal of the symposium is to assemble researchers and managers from around the world for an exchange of information with which to assess the current state of knowledge on northern goshawks. Topics of special interest are 1) population ecology and demographics, 2) linkages between habitat and demographic performance; and 3) landscape level management, but submissions dealing with any aspect of northern goshawk ecology and management will be considered. For information regarding the goshawk symposium, contact DR. CLINT BOAL, Texas Cooperative Fish & Wildlife Research Unit, Texas Tech University, Lubbock, TX 79409-2120 (EM: clint.boal@ttu.edu). For information regarding the conference, contact NANCY DEWITT, Alaska Bird Observatory, P.O. Box 80505, Fairbanks, AK 99708 (PH: 907-451-7159; EM: birds@alaskabird.org).

North American Association for Environmental Education 32nd Annual Conference. *October 7-11, 2003, Anchorage, Alaska.* The North American Association for Environmental Education (NAAEE; <http://naaee.org>) is a network of professionals, students, and volunteers working in the field of environmental education throughout North America and in over 55 countries around the world. The theme for this year's conference is "Think Globally While Acting Culturally". Thinking globally has long been a tenet of Environmental Education (EE). Acting culturally is the celebration of differences among all of us and respecting how these differences can help us shape a more positive future. The following strands are offered as guiding themes for helping us in Thinking Globally While Acting Culturally— an appropriate theme for the rich variety of ecological, human, and cultural diversity of Alaska. Strands will

feature workshops, concurrent sessions, poster and interact sessions. Keynote speakers will present constructs from the strands.

- Global EE Sustainability and Futures
- Joining Together - Partnering in EE
- Moving the Field Forward: Research in EE
- Reaching Across Audiences - Diversity in EE Programs
- Urban Rural Interface in EE

In addition, the U.S. Fish and Wildlife Service and Alaska Audubon Society are planning to hold an **All Bird Education Workshop** during the conference. For information regarding the conference contact, ERIC WADE, Alaska Natural Resource and Outdoor Education Association, P.O. Box 871528, Wasilla, AK 99687 (PH: 907-376-0970, FAX: 907-376-2396, EM: admin@anroe.org). For information on the All Bird Workshop contact Tamara Mills (PH:907-786-3517, EM: tamara_mills@fws.gov).

Annual meeting of Boreal Partners in Flight. *Tentatively November 5-6, 2003, Anchorage, Alaska.* Please contact Steve Matsuoka (PH: 907-786-3672, EM: steve_matsuoka@fws.gov) if you have suggestions on topics, would like to see changes in the date or location of the meeting, or would like to give a presentation to the group.

JOINT MEETING OF BOREAL PARTNERS IN FLIGHT AND PARTNERS IN FLIGHT BRITISH COLUMBIA/YUKON TERRITORY

Pam Sinclair, *Canadian Wildlife Service*;

Ilia Hartasanchez, *Duck Unlimited, Canada*; and

Steve Matsuoka, *U.S. Fish and Wildlife Service, Migratory Bird Management*

Introduction

On October 8-9, 2002 *Boreal Partners in Flight* had a unique opportunity to hold its annual meeting jointly with *Partners in Flight British Columbia/Yukon Territory* in Whitehorse, Canada. Over the two days we exchanged information and discussed our joint concerns for landbird populations relative to timber harvest, oil and gas development, and the cumulative effects of development (i.e. roads, forestry, oil and gas, etc.). During the same week we were fortunate to also participate in a meeting on international conservation organized by the Western Working Group of *PIF* and a workshop on monitoring boreal birds organized by the Canadian Wildlife Service. During these meetings we learned about linking conservation in north-western North America (BCR 4, 5, 10) with efforts in Mexico, received updates on large-scale landbird monitoring efforts across Canada and Alaska, and made important new contacts with biologists from Canada, temperate U.S., and Mexico. We anticipate that much future collaboration will result from these meetings.

We sincerely thank Krista DeGroot, Wendy Easton, Craig Machtans, Shawna Pelech (Canadian Wildlife Service), Bob Altman, Dan Casey (American Bird Conservancy), and Carol Beardmore (Partners in Flight) for organizing these meetings. We are particularly grateful to all of the speakers for the quality presentations that they gave and the more than 100 biologist from Canada, the U.S., and Mexico whose active participation made this an overwhelmingly successful international event.

The following information is a summary of the Joint Meeting of *Boreal Partners in Flight* and *Partners in Flight British Columbia/Yukon Territory*. The complete minutes and abstracts from this meeting and summaries of both the Western Working Group meeting and Boreal Landbird Monitoring Workshop can be found on the *Boreal Partners in Flight* website (www.absc.usgs.gov/research/bpif/bpif.html, click *PIF* Meetings).

Agenda

Tuesday, October 8th: 1:00 – 5:15 pm

- 1:00 Welcome, logistics and general objectives of meeting. *Ilia Hartasanchez, Ducks Unlimited.*
- 1:10 Common conservation priorities and issues for landbirds in Alaska, British Columbia, and the Yukon Territory. *Shawna Pelech, Canadian Wildlife Service-British Columbia, and Steve Matsuoka, U.S. Fish and Wildlife Service.*
- 1:30 Addressing common issues: evaluating the first ten years of the Monitoring Avian Productivity and Survivorship Program in Alaska and adjacent Canada. *David DeSante, Institute for Bird Populations.*
- 1:50 An overview of environmental risk assessments and ecosystem based management planning for the North Coast Land and Resource Management Plan. *Sarma Liepins, BC Ministry of Sustainable Resource Management.*
- 2:10 Landbirds in North-western Forests: perspectives on continental importance, and wintering grounds. *Peter Blancher, Bird Studies Canada.*
- 2:30 Western Boreal Forest Initiative. *Eric Butterworth, Ducks Unlimited.*
- 2:50 Break

Session 1: Understanding effects of forest management on avian communities. Moderator: *Pam Sinclair.*

- 3:10 Introduction and objectives. *Pam Sinclair, Canadian Wildlife Service-Yukon.*
- 3:20 Accommodating birds in managed coniferous forests of North America: a review of bird-forestry relationships. *Rex Sallabanks, Idaho Department of Fish and Game.*
- 3:40 The ecology of landbird communities in undisturbed forests in southeast Alaska: a synthesis of 10 years of research results. *Mary Willson, University of Alaska Fairbanks.*
- 4:00 Structure of avian communities in forested beach buffers in southeast Alaska: effects of buffer width. *Michelle Kissling, U.S. Fish and Wildlife Service.*
- 4:20 Nesting ecology of boreal forest birds relative to a massive outbreak of spruce beetle in Alaska. *Steve Matsuoka, U.S. Fish and Wildlife Service and Colleen Handel, U.S. Geological Survey.*
- 4:40 Forest management practices and boreal birds in Northeastern BC. *Mark Phinney, Louisiana Pacific Canada Ltd.*
- 5:00 Wrap Up. *Ilia Hartasanchez, Ducks Unlimited.*

Wednesday, October 9th: 8:00am – 5:30pm

Session 2: Integration of Avian Conservation into Forest Planning and Practices: Successes and Challenges.

Moderator: *Steve Matsuoka.*

- 8:00 Introduction and objectives. *Steve Matsuoka, U.S. Fish and Wildlife Service.*
- 8:10 Managing for goshawks. *Frank Doyle, Wildlife Dynamics Consulting.*
- 8:30 Landbirds and their role in Weyerhaeuser's Adaptive Management and Monitoring Program for the BC Coast. *Glen Dunsworth, Weyerhaeuser British Columbia.*
- 8:50A Forest Ecosystem Network for Southeast Yukon. *Mike Gill, Canadian Wildlife Service-Yukon.*
- 9:10 Changing policies of forest management and the conservation of wildlife species on the Tongass National Forest: past, present, and future. *Gene DeGayner, USDA Forest Service-Tongass National Forest.*
- 9:30 Break
- 9:50 Working Session: Integration of avian conservation into forest planning and practices. Moderator: Bob Altman, American Bird Conservancy.
- 12:00 Lunch

Session 3: Cumulative Effects of Resource Management on Landbird Populations. Moderator: *Shawna Pelech*

- 1:00 Introduction and objectives. *Shawna Pelech, Canadian Wildlife Service-British Columbia.*
- 1:10 On a wing and a prayer? Forecasting the future of boreal bird populations in Alberta forests. *Fiona Schmiegelow, University of Alberta.*

- 1:30 Effects of forest dissection by linear features on boreal forest bird communities: Issues of scale. *Erin Bayne, University of Alberta.*
- 1:50 Overview of development pressures and related conservation issues in north-eastern BC: approaches within the Muskwa-Kechika Management Area and beyond. *Pierre Johnstone, BC Ministry of Water, Land and Air Protection.*
- 2:10 The importance of managing riparian habitats for landbirds along the trans-mountain river corridors of southeast Alaska. *Jim Johnson, Utah State University.*
- 2:30 Break.
- 2:50 Working session: Assessing cumulative effects of resource extraction on landbirds: Identifying and filling knowledge gaps. Moderator: *Shawna Pelech.*
- 4:30 Summary session: How Alaska, BC and Yukon can work together. Moderator: *Bob Altman.*
- 5:15 Wrap up. *Ilia Hartasanchez.*

Summary of items discussed

Working Session: Integration of avian conservation into forest planning and practices.

Moderator: Bob Altman, American Bird Conservancy

- *Suggestions for researchers.*—There is a general need to get information to managers as soon as possible so that it can be incorporated into the land use planning process. The scientific literature has been the standard; however, we should also consider using the grey literature to distribute our findings more quickly. There is a need to disseminate general information on habitat use and natural history requirements to help develop common sense recommendations for forestry management—we can't wait forever for researchers to conduct the defining studies. Use adaptive monitoring whenever possible.
- *Major information needs.*—We need to improve predictive models of bird-habitat relationships to better identify the important structural components of habitat and to incorporate measures of fitness (nest success, survivorship) to help provide insight into the mechanisms governing avian responses to habitat manipulations. We also need better guidelines for second-growth management and species appropriate monitoring to assess the effectiveness of various forestry prescriptions.
- *Working with forest managers.*—In this arena we need to keep it simple while making sure our conservation priorities line up with the business reality. We have a better chance of influencing conservation in the private sector with face to face communication with industry reps and foresters. Working through the planning processes and peer and environmental pressure can also be effective.
- *Agencies and public land.*—Develop political pressure by educating the public in order to cause change in the agencies. In this arena we need to be engaged in the planning process. NGOs may be able to play a large role in helping agencies meet their mission.
- *Potential for products.*—Guides for best management practices and training programs and simplified field guides for foresters.

Working Session: assessing cumulative effects of resource extraction on landbirds: identifying and filling knowledge gaps. Moderated by Shawna Pelech, Canadian Wildlife Service.

- *Modeling consequences of development.*—Predictive models that describe the possible outcomes of land use on populations of animals are clearly needed by managers to quantify the trade-offs between conservation and different land use scenarios. These models can help set meaningful goals and objectives to guide conservation activities by identifying thresholds and targets for habitats and populations.

- *Thresholds.*—Thresholds describe a habitat or population level where if crossed an ecological change occurs in a populations. Regarding habitats and birds we don't want to be near the threshold as this is the point where populations are approaching inviability.
- *Targets.*—Targets are desired levels of habitats or population size. The desired level is invariably much higher than the threshold and should be within the normal range of variability for a viable population. Targets are useful in setting clear objectives for conservation in a planning area, however, they usually contain somewhat subjective elements that are based on economics and human values. Science needs to be used to develop targets for populations (i.e. predictive models) otherwise the targets are too easily challenged. Targets should be set at the scale of the BCR or larger and are therefore useful to include in the *PIF* plans.
- *Role of science.*—The role of scientists is to provide information, not set policies. However, too often scientists are not at the table to help set a future vision of resource use. The current institutional structure does not reward scientists involvement in such meetings. Unless the later changes this role will rest most squarely on conservationists such as *PIF* coordinators.

Summary Session: how Alaska, BC, and Yukon can work together. Moderator: Bob Altman, American Bird Conservancy.

- *Conservation planning.*—Developing joint landbird conservation plans for the portions of BCR 4 & 5 shared by Yukon Territory, British Columbia, and Alaska.
- *Habitat selection models.*— Summarize information on habitat selection and life history requirements for landbirds shared by Yukon Territory, British Columbia, and Alaska into a useful format for forest managers. We would need a central repository for the data and a commitment from someone who could analyze and/or serve the data.
- *Using existing models.*—Test in BC and Yukon the utility of models developed in Alberta to assess the effects of forestry and oil and gas development on birds. Determine what data would need to be collected to do this.
- *Population connectivity.*—Breeding birds of northwestern North America have a distinctive stable-isotope signature from breeding population in the rest of the continent. This makes populations in the region well suited for linking breeding and wintering sites.
- *Working with resource managers and industry.*—Organize a *PIF* meeting focused on a particular type of land use (i.e. oil and gas) and invite participation from scientists, land managers, and industry reps. The NABCI Canada Council will be discussing a strategy for conservation of birds in the boreal forest this Fall during which reps from oil and gas and forestry will be on hand. Hopefully some headway will have been made on this front during this meeting. Certification of foresters should be used as a tool to promote sustainable forest management in the region. We could work through public and certification advisory groups to get birds incorporated into the certification process. The conservation plans will be a useful reference for such efforts.
- *Coordinating conservation among scientists, conservationists, and land managers.*—There is a need for a formalized exchange of information among researchers, state or regional landbird coordinators, people who use the information on the ground, and the biologists conducting effectiveness monitoring. This needs to operate in a feedback loop such that research is relevant to the needs of managers, land managers have access to the most current information, and information on the success or failure of various land management

prescriptions is used to direct future research and management. A demonstration project could be developed to show how this loop operates.

OUTREACH AND EDUCATION

Common Winter Feeding Birds of Alaska

Andrea Swingley, *Alaska Bird Observatory*

The Alaska Bird Observatory is pleased to announce the availability of the new *Common Winter Feeder Birds of Alaska* poster. From rock doves to rosy-finches, this 17" x 22" full-color poster features 22 of the most common bird species that visit feeders in Alaska. Posters are available for purchase through the Alaska Bird Observatory for only \$5 each plus shipping & handling. Special prices are available for Alaska Bird Observatory members, retailers, and educators. For more information, or to order posters, contact the Alaska Bird Observatory on the web at <http://www.alaskabird.org>, by phone at (907) 451-7159, or at the Alaska Bird Observatory Center for Education & Research at 418 Wedgewood Drive in Fairbanks. The Alaska Bird Observatory is a nonprofit organization that works to advance the appreciation, understanding, and conservation of birds and their habitats through research and education.

Natural History Radio Shows

Ellen Campbell, *USDA Forest Service, Alaska Region* and

Rob McDonald, *U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge*

During fall of 2002, written texts for bird-related radio shows were collected from a variety of sources. Most texts came from Togiak NWR and were written for the *Bristol Bay Field Notes* radio program. Others came from the *Tongass Journal* radio show (Petersburg) and *For the Birds* formerly broadcast in southeast Alaska on public radio. Texts were edited for consistency and an index prepared. Currently 65 texts, ranging from *Bird Feet* to *Eskimo Tales: the Raven* are on the website at http://www.fs.fed.us/r10/educators/for_educators.html. Approximately 30 more radio texts have been submitted for expansion of the website and additional texts are welcome. These texts are available for use by anyone interested in developing a public interest radio spot. They may be used as is, modified to meet local situations, or used as reference material. The goal of the project was to make existing information available so that biologists interested in developing or continuing a radio program would not have to 're-invent the wheel' with each show.

Currently, the *Bristol Bay Field Notes* show produced by Rob MacDonald has been running nonstop since March 2000. Each individual show runs three times a week with new show airing each week. Between March 2000 and March 2003, 136 shows were produced, with 63 shows about birds. All shows are archived on CD. The Dillingham AM radio station, KDLG, serves 45 Alaskan villages, approximately 16,000 residents, and a listening area of 64,200 square miles, roughly the size of Ohio. This is accomplished by their use of repeaters and translators. The popularity of *Bristol Bay Field Notes* is shown by the radio station's listeners' surveys. In 2000, the show ranked as the third overall favorite feature, while in 2001 and 2002, *Bristol Bay Field Notes* ranked as the overall favorite feature.

Radio shows presented on *Bristol Bay Field Notes* have recently been promoted throughout all seven of the U.S. Fish and Wildlife Service regions. Numerous USFWS field stations throughout the country requested information and were sent a package containing the background of the program, some samples of the text, and even a CD with at least five shows. In addition, Heather Johnson, an Instructor in the Division of Education and Outreach at the National Conservation Training Center has been letting people know about *Bristol Bay Field Notes* in her outreach courses where she presents it as a good outreach tool and shares some of the clips off of the CD.

Cornell Laboratory of Ornithology's Project FeederWatch.

Robert Winckler, *Project FeederWatch Volunteer Ambassador for Alaska*

Alaska saw a 53% increase (from 74 to 113) in the number of Project FeederWatch (PFW) participants from the 1999/2000 season to the 2001/2002 season (Nov 01 to April 02). However, according to Cornell, only about 50% of those participants reported their data to Cornell. Either people are signing up for the PFW but then not following up and reporting what they are seeing or, they are signing up for the Project and not actually doing any counting. According to the Lab, the overall average for Canadian/U.S. PFW participant reporting is about 60%.

Considerable effort was put forward to spread the word to the public about PFW throughout Alaska in 2002. Some of these efforts included distributing flyers, forwarding press releases to newspapers, providing information for a piece on Channel 11 News, and giving public presentations at International Migratory Bird Day and local Audubon meetings.

During the 2001/2002 season, the Common Redpoll jumped ahead of the 2000/2001 season leader, the Black-capped Chickadee, and currently leads Alaska's Top Ten Feeder Bird List. The 2001/2002 Alaska Top Ten List reads: Common Redpoll, seen at 93% of Alaska feeders; Black-capped Chickadee, 86%; Boreal Chickadee, 68%; Red-breasted Nuthatch, 66%; Pine Grosbeak, 63%; Black-billed Magpie, 61%; Downy Woodpecker, 59%; Hairy Woodpecker, 56%; Pine Siskin, 40%; and Dark-eyed Junco.

New Listservers

The Western Working Group of *PIF* has a listserve set up to help provide information exchange among landbird biologists in Western North America. A wealth of useful information on funding opportunities, recent conservation activities, and summaries of recent meetings are provided. If you are interested in subscribing to the list server send the message, Subscribe WPART-L yourfirstname yourlastname, to listserv@listserv.uark.edu. Generally 2-3 messages are distributed each week.

There is also a new *Shorebird Management Listserve* which is monitored and questions routed to qualified shorebird management experts. To subscribe contact Brad Andres, U.S. National Shorebird Coordinator, U.S. Fish & Wildlife Service, email: Brad_Andres@fws.gov.

RAPTORS

A summary of raptor monitoring in Alaska 2002

John Wright, *Alaska Department of Fish and Game*

A number of raptor surveys are conducted each year in Alaska. In January 2003 a request for information on surveys conducted in 2002 was sent to members of *Boreal Partner in Flight*. A compilation of 6 responses and summaries of several other projects is presented in Table 1. A highlight of year 2002 was the 5-year periodic surveys of Bald Eagles in southeast Alaska and the Kodiak NWR by U.S. Fish and Wildlife Service. In southeast, an aerial survey of random plots resulted in an estimate of 12,178 adult Bald Eagles (Mike Jacobsen and Jack Hodges, FWS, Juneau). When this survey began in 1967, the population was estimated at 7,230 adults. It increased into the early 1980s and has remained stable for the past 20 years. On Kodiak, 1,133 nests were located, with 628 occupied. Fifty-three percent of occupied nests were successful, producing 1.63 fledglings per successful nest. From 1997 to 2002, the number of Bald Eagle nests increased 19%, and nearly 250% since the survey began in 1963 (see *Bald Eagle surveys on Kodiak National Wildlife Refuge* below). Additional information on Bald Eagles was reported from Togiak and Tetlin NWRs.

The information in Table 1 is far from complete. I know that many other National Wildlife Refuges conduct raptor surveys, and additional work was likely done by other agencies and organizations as well. If all of the survey data were compiled it could provide valuable and useful information. For example, it is interesting that Golden Eagle productivity was extremely low statewide. In BCR 4 this was attributed to the lack of snowshoe hares (see *Golden Eagles and Gyrfalcons in Denali National Park and Preserve* below), but few young were produced on the Seward Peninsula and apparently in the northern Brooks Range as well--where hares are not a primary prey of eagles. I recommend that *Boreal Partners in Flight* compile and summarize information from raptor surveys in Alaska each year. For some raptor species we may find that we are adequately monitoring status and possibly trend, for others some additional work will be identified as needed, and for other species it will be obvious that we need to develop completely new methods and specific projects. In addition to survey results, we should include more detailed information on the survey area, and on methods and level of effort.

Golden Eagles and Gyrfalcons in Denali National Park and Preserve

Carol McIntyre, *National Park Service, Denali National Park and Preserve*

We monitored the reproductive activities of Golden Eagles and Gyrfalcons in Denali for the 16th consecutive year. The occupancy of nesting territories for both species was stable (averaged over 90% for both species), but productivity was the lowest recorded in 16 years. Of 74 territorial pairs of Golden Eagles, only 4 produced fledglings, and each only produced a single fledgling. Of 17 territorial pairs of Gyrfalcons, no pairs produced fledglings. We also monitor the abundance of snowshoe hare and willow ptarmigan which crashed in 2002 to their lowest numbers recorded in 15 years.

Table 1. Raptor Surveys in Alaska, 2002

Location	BCR	Osprey	Bald Eagle	Rough-legged Hawk	Golden Eagle	Gyr Falcon	Peregrine Falcon	Comments	Source
Southeast Alaska (every 5 yrs)	5		est. 12,178 adults					stable	M.Jacobsen, FWS
Kodiak NWR (every 5 yrs)	2		628 active nests 0.9 young/nest					expanding	D.Zwiefelhofer, FWS
Seward Peninsula (every 3 yrs)	2			67 sites	21 sites 3 w/young; 6 incubating	36 sites	5 sites	late spring	P.Bente, ADFG
Togiak NWR	2		34 active nests, 1.5 young/nest						R.MacDonald, FWS
Tetlin Refuge/GMU12 (annual)	4	19 pairs, Lowest # pairs recorded	43 pairs, # pairs stable or increasing				12 pairs, # pairs expanding		H.Timm, FWS
Tanana River (annual)	4						40 pairs 1.5young/pair		B.Ritchie, ABR
Central Alaska Range (4-5 yr project)	4				no sites active (8 in 2000)				S.Arthur, ADFG
Denali NP (annual)	4				74 pairs, only 4 w/young	17 pairs, no young		stable # adults lowest production recorded	C.McIntyre, NPS
Upper Yukon River (annual)	4						47 pairs, 1.4young/pair		S.Ambrose, NPS
Dietrich/Kanuti rivers (rotating schedule)	4								T.Craig, BLM
Porcupine River (annual)	4				21 nest sites, no adults or young		26 pairs, 1.6young/pair		D.Payer FWS
Canning River (every 5 years)	3			4 active	none active	1active	1 active		D.Payer, FWS
Colville River (annual)	3			ca. 80 pairs		ca. 10 pairs	ca. 60 pairs		T.Swem, FWS

Bald Eagle surveys on Kodiak National Wildlife Refuge

Denny Zwiefelhofer, *U.S. Fish and Wildlife Service, Kodiak National Wildlife Refuge.*

Kodiak National Wildlife Refuge conducted Bald Eagle nesting surveys during May and production surveys during July and August of 2002 on all Kodiak refuge lands. The last comprehensive Bald Eagle nesting and production surveys were conducted in 1997. A total of 1,133 nests were located during the May survey with 55% (628) of the total active or occupied. Of the 628 nests determined to be active or occupied in May, 598 (95%) were rechecked. A total of 319 (53%) were successful in producing a total of 520 young. The 2002 (53%) nesting success rate was lower than 1997 (54%), and the historic average (64%) nest success rates. The 2002 nest productivity parameters (0.87 fledglings/occupied nest; 1.63 fledglings/successful nest) were slightly above the 1997 production rates (0.8 fledglings/occupied nest; 1.5 fledglings/successful nest) with the historic production averages higher for the occupied nests (1.0 fledglings/occupied nest) and lower for the successful nests (1.55 fledglings/successful nest). Kodiak NWR's nesting Bald Eagle population continues to expand with the number of occupied nests located in 2002 up nearly 19% over 1997 occupied nest total ($n = 530$). Bald Eagle nesting activity on Kodiak NWR has increased nearly 248% with an estimated 160% increase in total nest production since the start of surveys in 1963.

Raptor surveys on Togiak National Wildlife Refuge

Rob MacDonald, *U.S. Fish and Wildlife Service, Togiak National Wildlife Refuge*

Twenty-one raptor species have been identified on or adjacent to the Togiak Refuge. The most abundant species are Bald Eagle, Northern Harrier, Rough-legged Hawk, and Short-eared Owl. In addition, Osprey, Golden Eagle, Merlin, Gyrfalcon, Peregrine Falcon, Great Horned Owl, Snowy Owl, Northern Hawk Owl, and Boreal Owl are observed in lesser numbers each year. In 2002, the Togiak National Wildlife Refuge continued a project to monitor the occupancy and productivity of nesting raptors using fixed-wing aircraft. This is one of 10 projects identified in the Togiak Refuge's Wildlife Inventory and Monitoring Plan and relates directly to two of the purposes for which the Togiak Refuge was created.

In 2002, raptor nest occupancy surveys were flown from 11-12 June and a raptor nest productivity survey was flown on 29 July. During these surveys, 40 Bald Eagle nests were observed with 34 found to be active. Of the 34 active Bald Eagle nests observed, 50 chicks were documented in 28 nests for a brood size of 1.79 chicks per successful nest. There were seven nests that had one chick present, 20 nests that had two chicks present, and one nest that had three chicks present. Since the inception of the Togiak Refuge in 1980, raptor productivity surveys were flown in 1985-1989 and again in 1999-2002. In the initial surveys from 1985-1989, an average of 1.73 Bald Eagle chicks per successful nest were documented (range of 1.50 to 2.00). From 1999-2002, we recorded 1.33, 1.35, 1.82, and 1.79 chicks per successful nest, respectively. Although Bald Eagle nests are primarily observed during our raptor surveys, we have been able to record limited data for Osprey, Rough-legged Hawk, Golden Eagle, Peregrine Falcon, and unidentified large-owl nests. However, these data don't accurately represent the extent of nesting for these species on the Togiak Refuge.

The Togiak Refuge is currently revising its Comprehensive Conservation Plan (CCP) that was originally written in 1987. The purpose of the CCP is to develop a course of action, with help from the public and government agencies, which will assist the Togiak Refuge achieve its

purpose and goals and fulfill the mission of the Fish and Wildlife Service for the next 10 to 15 years. Part of this CCP process was an analysis of potential impacts of the five proposed alternatives to Bald Eagles. The analysis concluded that the current level of human activity on the Togiak Refuge has not negatively impacted Bald Eagle productivity or nesting and that if human activities change over the next 5-10 years as predicted, no significant impacts to Bald Eagle productivity or nesting are anticipated.

We plan to continue these surveys again in 2003. We would like to initiate surveys for Gyrfalcons, but proposed work did not make the final cut due to budget constraints last year, and most likely this year as well.

INVENTORY AND MONITORING

North American Breeding Bird Survey summary for 2002

Steve Matsuoka, *U.S. Fish and Wildlife Service, Migratory Bird Management*

In 2002 the Breeding Bird Survey (BBS) in Alaska had another strong year with 72 routes run in the state. This continues an unmatched decade (1993 – 2002) of effort and consistency in Alaska during which more than 65 routes have been run in each year (Figure 1, Table 2). This impressive effort by observers throughout the state has brought the number of routes surveyed for 10 or more years to 43. The Ketchikan, Swan Lake Road, Salcha, Zimova Strait, and Galena routes in particular are models of consistency having all been surveyed for 15 or more consecutive years (Table 2).

The hard work and dedication of observers throughout the state is paying big dividends as we are beginning to obtain estimates of population trends for a wide variety of species in Alaska (Table 3). Since 1980 numbers of some of our common birds such as Swainson's Thrush (- 1.3% per year) and White-crowned Sparrow (- 1.6% per year) have declined while American Robin (+ 2.0% per year) and Yellow-rumped Warbler (+ 3.4% per year) have increased. **Of special concern is the Blackpoll Warbler which has declined at a rate (- 3.4% per year) that suggests Alaskan populations have been reduced by more than 50% since 1980.** Also, two species of shorebirds, the Lesser Yellowlegs (- 3.3% per year) and Solitary Sandpiper (- 4.9% per year), may also be in decline, however, the data supporting these results are not as sound as for the passerines noted above (Table 3).

Clearly, we are entering a time when the BBS in Alaska will help us identify which species in the state require additional research and conservation. We should keep in mind that the BBS is the only broadly implemented monitoring program for a wide diversity of bird species in Alaska. Until other programs such as the Alaska Off-road Point Count Program and Program for Integrated Shorebird Monitoring are fully implemented and run for a number of years, the BBS is our most viable means of identifying which species, outside of waterfowl and seabirds, need our help in Alaska. If we are able to sustain our commitment to the BBS in Alaska, the number of species that we are able to effectively monitor will only increase with time.

If you have questions about the BBS program in Alaska contact Steve Matsuoka (907-786-3672, steve_matsuoka@fws.gov).

Table 2. Survey histories of BBS routes in Alaska, 1968 – 2002. Results for individual routes was downloaded from the BBS website (<http://www.mp2-pwrc.usgs.gov/bbs/retrieval/disclaim.cfm>).

[illegible]

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Route	Name	Year ¹																					Years									
		68	71	72	73	74	75	76	77	78	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	Run
054	Sourdough											x					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	15
060	Katmai NP																					x	x	x	x	x			x			6
084	Bear Creek													x	x	x	x	x	x													6
090	Adak											x	x	x	x			x	x	x	x	x	x	x	x					x		14
101	Chicken																			x	x	x		x	x							5
115	Savage													x	x		x		x		x	x	x	x	x	x	x	x	x	x	x	14
116	Moose Pass											x		x							x											3
117	Hatcher Pass										x	x		x	x							x	x	x	x	x	x	x	x	x	x	14
118	Swan Lake Rd										x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	21
119	Anchor River											x	x		x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	18
121	Petersburg												x		x																	2
122	Sitka																					x	x	x	x	x						5
123	Thorne Bay																x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	14
125	Yakutat																					x	x	x	x	x	x	x	x	x	x	10
131	Chiniak												x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x	16
142	Chena Hot Springs 2																											x	x	x	x	4
180	Dillingham																					x	x	x	x	x		x	x	x	x	9
191	Cold Bay																					x	x	x	x	x	x	x	x	x	x	10
192	King Salmon																					x	x	x	x	x	x	x	x	x	x	10
212	Lake Louise																					x	x	x	x	x	x	x				8
216	Hope												x									x	x		x	x	x				x	7
214	Wasilla											x																				1
221	Mitkof Isle															x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	14
224	Zimovia Strait															x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	15
284	Nicholai Slough																					x	x	x	x	x	x	x	x	x	x	10
313	Petersville													x	x					x	x	x		x	x	x	x	x			x	11
318	Seven Lakes													x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17
319	Kachemak													x	x		x	x			x	x	x	x	x	x	x	x	x	x	x	15
321	Harlequin Lake																					x	x	x	x	x	x		x	x	x	9
372	Dietrich Camp																					x	x	x	x	x	x	x	x	x	x	10
401	Burma Road																								x	x	x	x	x	x	x	7
402	Cape Nome																					x	x			x						3
403	Caribou Mountain																					x	x	x	x	x	x		x	x	x	9
404	Coldfoot																						x	x	x	x	x	x	x	x	x	9
405	Council																					x	x	x	x	x	x	x				8
406	Donelly Dome																															

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Route	Name	Year ¹																										Years				
		68	71	72	73	74	75	76	77	78	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	Run
812	Pinoche Trail												x																			1
816	Kenai Lake												x								x											2
817	Elmendorf												x	x																		2
822	Sitka												x	x	x	x	x	x	x	x	x											9
824	Wrangell												x																			1
825	Yakutat												x																			1
832	Alpenglow																					x	x	x			x	x	x	x	x	8
850	Copper River																					x	x	x	x	x						5
880	Dillingham												x																			1
881	Kugarak														x	x																2
882	Selawik														x	x																2
883	Galena													x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	18
884	Kotzebue														x							x										2
891	Cold Bay												x	x		x	x	x	x	x												8
901	Paxon Lake																		x	x	x		x	x	x							6
902	Nabesna Road																	x	x	x	x	x	x	x	x	x	x		x		x	12
903	Kuskulana																		x	x	x	x	x	x		x	x					9
905	McCarthy Road 2																	x	x	x	x	x	x	x	x		x	x				10
906	Stikine River																													x	x	2
Annual Totals		2	1	2	1	1	3	1	3	2	12	20	20	18	26	26	17	26	27	32	36	66	79	75	77	81	70	67	75	70	72	

¹ Years in which no routes were run are not included.

Table 3. Trends in avian abundance from 1980 – 2001 calculated from the North American Breeding Bird Survey (BBS) in Alaska. Only those species whose trends had a p-value < 0.15 are included. Those species with negative trends are noted in bold. For more information on these and other population trends see Sauer et al. 2002 (<http://www.mbr-pwrc.usgs.gov/bbs>).

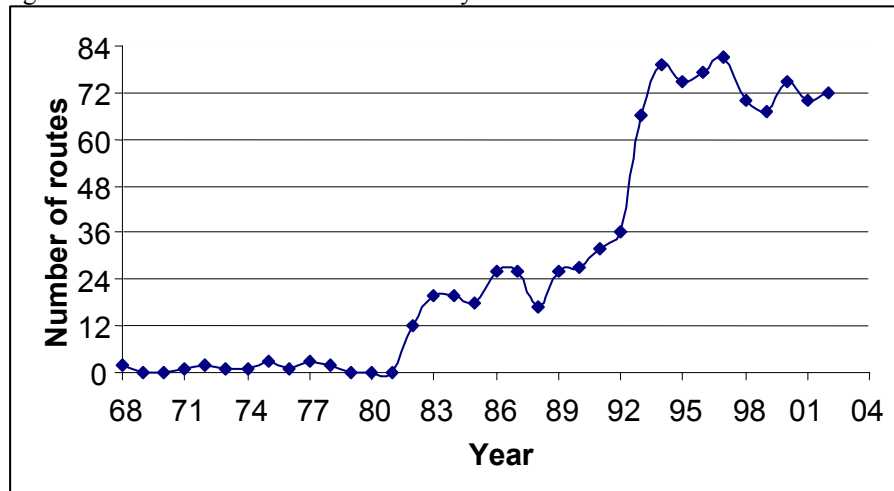
Species	Trend ¹	P-value	n ²
Northern Shoveler	16.1*	0.10	12
Green-winged Teal	17.1*	0.05	32
Ring-necked Duck	24.8*	0.01	6
Bald Eagle	5.5*	0.07	40
Northern Harrier	27.4*	0.02	5
Greater Yellowlegs	4.8*	0.14	36
Lesser Yellowlegs	-3.3*	0.06	41
Solitary Sandpiper	-4.9*	0.01	20
Wilson's Snipe	2.5*	0.04	82
Hairy Woodpecker	8.2*	0.09	24
Three-toed Woodpecker	29.4*	0.12	13
Olive-sided Flycatcher	-3.3**	0.12	53
Alder Flycatcher	2.0*	0.06	69
Say's Phoebe	-9.3*	0.00	8
Black-billed Magpie	4.2*	0.08	26
Northwestern Crow	3.9**	0.09	21
Golden-crowned Kinglet	-4.7**	0.14	29
Townsend's Solitaire	5.7*	0.01	6
Swainson's Thrush	-1.3***	0.08	78
American Robin	2.0***	0.04	92
Orange-crowned Warbler	1.7***	0.15	87
Yellow-rumped Warbler	3.4***	0.01	73
Blackpoll Warbler	-3.4**	0.01	48
Common Yellowthroat	14.0*	0.01	6
Fox Sparrow	3.3*	0.02	86
Lincoln's Sparrow	3.3*	0.08	64
White-crowned Sparrow	-1.6***	0.02	70
Red Crossbill	8.2**	0.08	15

¹ Categories for the credibility of trend estimate are as follows:

- * The regional abundance is less than 0.1 birds/route (very low abundance), the sample is based on less than 5 routes for the long term, or is based on less than 3 routes (very small samples), or the results are so imprecise that a 5%/year change would not be detected over the long-term (very imprecise).
- ** This category reflects data with a deficiency. In particular the regional abundance is less than 1.0 birds/route (low abundance), the sample is based on less than 14 routes (small sample size), the results are so imprecise that a 3%/year change would not be detected (quite imprecise), or the sub-interval (1966 – 1980, 1980 – 2001) trends are significantly different from each other (P less than 0.05, based on a z-test). This suggests inconsistency in trend over time).
- *** This category reflects data with at least 14 samples in the long term, of moderate precision, and of moderate abundance on routes.

² n = number of routes on which the trend is estimated.

Figure 1. Number of BBS routes run each year from 1968 – 2002 in Alaska



Using Breeding Bird Surveys to monitor snowshoe hare populations in Alaska

Steve DuBois, *Alaska Department of Fish and Game, Delta Junction*

Biologists monitoring snowshoe hare population trends have used a variety of methods including aerial and ground based track surveys, pellet counts, and trapping indices. These techniques are usually localized, labor intensive, expensive, and commonly vary among observers. Using the Breeding Bird Survey (BBS) may provide a simple, inexpensive method to monitor population trends in snowshoe hare over large areas. Here, I propose a method of using the BBS as a simple, large-scale method of monitoring snowshoe hare population trends across their range in Alaska.

I have been using the Delta BBS route to record snowshoe hare abundance from 1995–2002. The Delta BBS route starting point is approximately 10 miles south of Delta Junction along the Richardson Highway at Milepost 256.0 and the route proceeds south to Milepost 230.4. I conduct the Delta BBS route in late-June using standard BBS survey methodology including starting ½ hour before sunrise and stopping approximately every ½ mile for 50 stops to listen to singing birds for 3 minutes. While conducting the survey I also record all snowshoe hares I see while driving between stops and while listening at stops. I use the standard BBS data sheet to record the observations on the last row at the bottom of the data recording sheet. I record observations by stop, with hares observed while driving between stops recorded at the next stop.

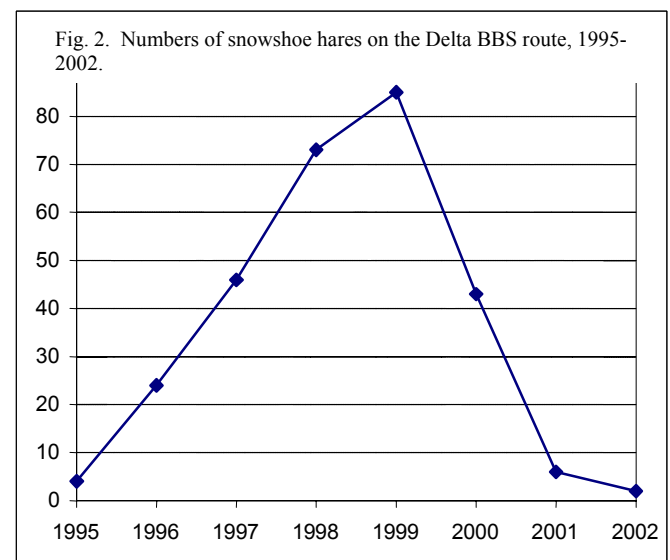


Figure 2 illustrates changes in snowshoe hares numbers seen along the Delta BBS route from 1995–2002. These results closely follow my anecdotal observations of snowshoe hare populations in the area. BBS surveys are currently being conducted throughout the state by experienced observers. I believe that encouraging observers to record snowshoe hare

observations would provide annual indices to snowshoe hare population trends in Alaska. Steve Matsuoka (Land Bird Coordinator, U.S. Fish and Wildlife Service) has volunteered to serve as the central repository for the data.

Breeding Bird Surveys along the lower Yukon River watershed

Christopher Harwood, *U.S. Fish and Wildlife Service, Yukon Delta/Yukon Flats National Wildlife Refuge*

In 1998, the Yukon Delta Refuge initiated a wide-scale landbird monitoring program along the Lower Yukon and Lower Kuskokwim rivers. The purpose of the project was three-fold: (1) to develop a refuge-specific monitoring program, (2) to assist other land management units in monitoring “Species of Concern” for the Western Alaska Bioregion, and (3) to remedy the lack of ornithological data in the study areas. Eighteen Yukon River and 12 Kuskokwim River breeding bird survey routes were established in each watershed. The Yukon and Kuskokwim BBS routes were to be run in even- and odd-numbered years, respectively. In 2000, the number of routes on the Yukon was reduced to ensure that all routes could be consistently replicated (e.g., provide a cushion for the vagaries of weather, gas availability in the villages, boat performance, etc.). To select the 13 permanent routes, we dropped two of the routes that were off the refuge, as well as one 40-stop route. We then randomly selected 13 of the 15 remaining routes. By reducing the number of routes, we would be able to start the surveys proper on 10 June, the earliest date allowed for Alaska-run routes (i.e., in 1998, we started on 6 June).

Able assisted by ROS (trainee) Patrick Snow and RIT James Sipary, Sr., who split duties as boat driver, I conducted breeding bird surveys of 13 sloughs and side-tributaries of the Lower Yukon River, between Holy Cross and Emmonak, from 6 - 27 June 2002. We borrowed ADF&G's 22' Y-K Raider (90hp Honda outboard) stored at Pitkas Point. We employed local help to trailer and launch the boat, and then finally to store it. Provisions and gas were purchased in villages along the Yukon. By surveying as we progressed downriver, we took advantage of the general pattern of an east-to-west advancement of migration arrival/singing activity/nesting initiation.

Again, survey protocol followed that of standard river-run Breeding Bird Surveys. Routes consisted of 50 stops, spaced ≥ 0.5 mi apart. Surveys were begun 0.5 hr before sunrise, and point counts were 3 min long. Routes had been chosen in 1998 according to these criteria: (1) river must occur in Lower Yukon floodplain, (2) habitat should be predominantly tall shrub or higher, (3) river must accommodate 50 stops, (4) water depth must be sufficient annually (i.e., route must be navigable yearly), and (5) river must be wide enough to discourage beaver dams, but narrow enough to minimize chop and permit auditory detections from opposite side. We used a GPS, sometimes augmented by written descriptions, to relocate all stops.

We completed all surveys which included 650 stops distributed over >325 river-miles. Mean time to complete a route was 5 hr 42 min, with minimum and maximum times of 5 hr 11 min and 6 hr 44 min, respectively. Ten of 13 routes were completed in under six hours. At least three conditions contributed to higher than desired times: (1) 3 consecutive routes with mid-survey fog (~10 stops in duration), (2) extremely low water levels (requiring more cautious driving and poling out of stops), and (3) motor problems (e.g., clogged water intake; failed starter for two surveys, requiring manual pull start at 100 stops).

Including official surveys and incidental observations, 92 species of birds were detected during the project. While most species were detected on the BBS routes proper, some were only detected during village stops or during travel along the Yukon River proper (some 250 miles between Paimiut and Emmonak). Comparisons of species abundance and distribution presented here are restricted to detections made during official survey periods. The most abundant species (based on individuals detected per stop) on the survey was Northern Waterthrush (2.6 individuals/stop; Table 4). Northern Waterthrush was also the most widespread species based on detection frequency (i.e., percentage of stops on which detected), being detected on 92% of all stops (Table 5). Abundance indices for “Species of Concern” were also analyzed (Table 6). The eight species for the Western Alaskan Bioregion (as determined at the 1999 Alaskan Boreal Partners in Flight Working Group meeting) include: Gyrfalcon, Gray-cheeked Thrush, Varied Thrush, Blackpoll Warbler, Golden-crowned Sparrow, McKay's Bunting, Rusty Blackbird, and Hoary Redpoll. It appears from detection frequencies/rates that this survey, in conjunction with the Kuskokwim BBS, can help to monitor three to four of the species (i.e., Gray-cheeked Thrush, Varied Thrush, Blackpoll Warbler, and probably Rusty Blackbird). Gyrfalcon, Golden-crowned Sparrow, and McKay's Bunting were not detected, while no attempt was made to distinguish Hoary Redpoll from its congener, Common Redpoll, either visually or audibly. A 3-year comparisons of indices of abundance [i.e., individuals/stop] and detection frequency [i.e., percent of stops detected] are presented in Tables 7 and 8 for shorebirds and songbirds for the 13 common routes of the Yukon River.

Funding/personnel permitting, we hope to continue conducting the two river surveys in alternate years, which will still allow us to monitor trends in a reasonable time frame. Additionally, we intend to conduct habitat analyses of all route stops to complement the surveys.

Table 4. Species ranked by abundance (individuals detected per stop), Lower Yukon River BBS, 10 - 27 June 2002.

Rank	Species	Individuals/Stop
1	Northern Waterthrush	2.59
2	Bank Swallow	2.48
3	Yellow Warbler	2.02
4	Fox Sparrow	1.42
5	Gray-cheeked Thrush	1.21
6	Varied Thrush	0.82
7	Blackpoll Warbler	0.73
8	Yellow-rumped Warbler	0.72
9	Redpoll spp.	0.58
10	Common Snipe	0.47

Table 5. Species ranked by detection frequency (percentage of stops on which detected), Lower Yukon River BBS, 10 - 27 June 2002.

Rank	Species	% Stops
1	Northern Waterthrush	92
2	Fox Sparrow	81
3	Yellow Warbler	73
4	Gray-cheeked Thrush	64
5	Blackpoll Warbler	55
6	Varied Thrush	51
7	Redpoll spp.	44
8	Yellow-rumped Warbler	42
9	Common Snipe	41
10	Wilson's Warbler	27

Table 6. Abundance indices for selected Species of Concern - Western Alaska Bioregion, Lower Yukon River BBS, 10 - 27 June 2002.

Species	%Routes with Detections	%Stops with Detections	Individuals/Stop
Gray-cheeked Thrush	100	64	1.21
Varied Thrush	100	51	0.82
Blackpoll Warbler	100	55	0.73
Rusty Blackbird	100	17	0.20

Table 7. Three-year comparison of individuals detected per stop (13 routes, 650 stops) for shorebirds and songbirds, Lower Yukon River BBS, 1998-2002.

Species	Indiv./Stop 1998	Indiv./Stop 2000	Indiv./Stop 2002	Total 1998	Total 2000	Total 2002
SHOREBIRD						
Black-bellied Plover	0.00	0.00	0.00	2	0	0
Pacific Golden-Plover	0.00	0.00	0.00	0	1	0
Semipalmated Plover	0.01	0.00	0.00	4	0	1
Greater Yellowlegs	0.00	0.00	0.00	0	0	1
Lesser Yellowlegs	0.04	0.06	0.04	23	38	29
Solitary Sandpiper	0.08	0.11	0.10	52	71	66
Spotted Sandpiper	0.09	0.04	0.06	61	27	36
Whimbrel	0.00	0.01	0.01	1	4	5
Bristle-thighed Curlew	0.00	0.00	0.00	0	2	1
Hudsonian Godwit	0.00	0.00	0.00	1	0	0
Bar-tailed Godwit	0.00	0.00	0.00	0	1	0
Least Sandpiper	0.01	0.01	0.01	6	5	7
Short-billed Dowitcher	0.00	0.01	0.01	3	6	9
Long-billed Dowitcher	0.00	0.00	0.00	1	0	0
Common Snipe	0.48	0.66	0.47	309	430	307
Red-necked Phalarope	0.01	0.02	0.02	5	10	13
SONGBIRDS						
Olive-sided Flycatcher	0.03	0.04	0.03	19	24	22
Alder Flycatcher	0.54	0.68	0.37	350	442	243
Northern Shrike	0.01	0.01	0.00	9	5	1
Gray Jay	0.10	0.10	0.10	62	62	64
Common Raven	0.07	0.09	0.05	45	59	35
Tree Swallow	0.77	0.61	0.33	502	395	215
Bank Swallow	5.64	3.66	2.48	3664	2378	1614
Black-capped Chickadee	0.13	0.05	0.13	83	30	84
Boreal Chickadee	0.00	0.01	0.01	3	4	5
Ruby-crowned Kinglet	0.02	0.01	0.00	14	4	3
Arctic Warbler	0.18	0.16	0.18	120	107	117
Gray-cheeked Thrush	0.88	1.08	1.21	572	705	789
Swainson's Thrush	0.17	0.25	0.30	111	161	192
Hermit Thrush	0.00	0.00	0.00	0	2	2
American Robin	0.20	0.18	0.12	130	117	81
Varied Thrush	0.92	1.01	0.82	600	655	530
Yellow Wagtail	0.00	0.00	0.00	1	0	0
Bohemian Waxwing	0.00	0.01	0.00	0	6	0
Orange-crowned Warbler	0.36	0.44	0.34	234	284	224
Yellow Warbler	2.67	2.03	2.02	1734	1318	1313
Yellow-rumped Warbler	0.85	0.57	0.72	551	371	466
Blackpoll Warbler	1.00	1.00	0.73	648	653	473
Northern Waterthrush	2.40	2.76	2.59	1563	1791	1682
Wilson's Warbler	0.49	0.48	0.40	321	311	258
American Tree Sparrow	0.09	0.20	0.35	56	133	225
Savannah Sparrow	0.17	0.17	0.10	109	108	68
Fox Sparrow	1.22	1.42	1.42	794	921	921
Lincoln's Sparrow	0.12	0.11	0.08	77	71	52
White-crowned Sparrow	0.02	0.01	0.04	15	9	26
Dark-eyed Junco	0.03	0.04	0.02	20	28	15
Rusty Blackbird	0.27	0.25	0.20	177	161	130
Pine Grosbeak	0.08	0.13	0.18	53	83	115
White-winged Crossbill	0.00	0.01	0.00	2	7	1
Redpoll spp.	0.47	0.57	0.58	307	373	380

Table 8. Three-year comparison of detection frequencies (% stops detected for 13 routes, 650 stops) for shorebirds and songbirds, Lower Yukon River BBS, 1998-2002.

Species	% Stops 1998	% Stops 2000	% Stops 2002	Total 1998	Total 2000	Total 2002
SHOREBIRDS						
Black-bellied Plover	0.3%	0.0%	0.0%	2	0	0
Pacific Golden-Plover	0.0%	0.2%	0.0%	0	1	0
Semipalmated Plover	0.2%	0.9%	0.2%	1	6	1
Greater Yellowlegs	0.0%	0.0%	0.2%	0	0	1
Lesser Yellowlegs	3.4%	5.1%	3.8%	22	33	25
Solitary Sandpiper	7.5%	10.3%	9.4%	49	67	61
Spotted Sandpiper	8.2%	3.7%	5.1%	53	24	33
Whimbrel	0.2%	0.6%	0.8%	1	4	5
Bristle-thighed Curlew	0.0%	0.2%	0.2%	0	1	1
Hudsonian Godwit	0.2%	0.0%	0.0%	1	0	0
Bar-tailed Godwit	0.0%	0.2%	0.0%	0	1	0
Least Sandpiper	0.9%	0.8%	1.1%	6	5	7
Short-billed Dowitcher	0.3%	0.9%	1.4%	2	6	9
Long-billed Dowitcher	0.2%	0.0%	0.0%	1	0	0
Common Snipe	38.3%	53.5%	40.6%	249	348	264
Red-necked Phalarope	0.3%	1.1%	1.4%	2	7	9
SONGBIRDS						
Olive-sided Flycatcher	2.6%	3.2%	2.9%	17	21	19
Alder Flycatcher	33.5%	38.5%	25.8%	218	250	168
Northern Shrike	1.1%	0.6%	0.2%	7	4	1
Gray Jay	7.8%	8.2%	8.3%	51	53	54
Common Raven	6.2%	7.1%	4.3%	40	46	28
Tree Swallow	44.5%	40.2%	21.7%	289	261	141
Bank Swallow	26.0%	31.5%	20.3%	169	205	132
Black-capped Chickadee	9.2%	4.2%	10.2%	60	27	66
Boreal Chickadee	0.5%	0.5%	0.8%	3	3	5
Ruby-crowned Kinglet	1.8%	0.5%	0.5%	12	3	3
Arctic Warbler	11.5%	11.4%	11.1%	75	74	72
Gray-cheeked Thrush	54.5%	61.4%	63.5%	354	399	413
Swainson's Thrush	11.7%	16.3%	17.4%	76	106	113
Hermit Thrush	0.0%	0.2%	0.2%	0	1	1
American Robin	17.7%	14.9%	11.1%	115	97	72
Varied Thrush	54.5%	59.8%	51.2%	354	389	333
Yellow Wagtail	0.2%	0.0%	0.0%	1	0	0
Bohemian Waxwing	0.0%	0.6%	0.0%	0	4	0
Orange-crwned Warbler	24.3%	30.8%	24.3%	158	200	158
Yellow Warbler	89.5%	77.7%	73.8%	582	505	480
Yellow-rumped Warbler	48.3%	35.1%	41.5%	314	228	270
Blackpoll Warbler	68.3%	71.5%	55.2%	444	465	359
Northern Waterthrush	90.5%	96.8%	92.0%	588	629	598
Wilson's Warbler	32.6%	33.8%	27.1%	212	220	176
American Tree Sparrow	6.8%	14.6%	23.1%	44	95	150
Savannah Sparrow	11.4%	8.9%	7.8%	74	58	51
Fox Sparrow	77.5%	80.8%	80.8%	504	525	525
Lincoln's Sparrow	9.8%	7.1%	6.3%	64	46	41
White-crowned Sparrow	1.7%	1.2%	2.8%	11	8	18
Dark-eyed Junco	2.8%	3.1%	2.0%	18	20	13
Rusty Blackbird	19.7%	19.5%	16.5%	128	127	107
Pine Grosbeak	6.6%	10.8%	15.7%	43	70	102
White-winged Crossbill	0.3%	0.5%	0.2%	2	3	1
Redpoll spp.	37.5%	44.3%	43.8%	244	288	285

Alaska Off-road Point Count Program: a monitoring tool for roadless areas

Colleen Handel, *U.S. Geological Survey—Alaska Science Center*

Presented at Canadian Wildlife Service Boreal Forest Monitoring Workshop, 10 October 2002, Whitehorse, Yukon, Canada.

The existing road-based North American Breeding Bird Survey (BBS) provides some information on population trends of landbirds in Alaska but vast areas of the state remain inadequately sampled because of the absence of roads. Since 1992 Boreal Partners in Flight has been developing and testing methods for the Alaska Off-road Point Count Program, a proposed complementary program to monitor breeding landbird populations using a “mini-BBS” approach across roadless areas of the state. The primary objectives of the program are to (1) monitor long-term population trends; (2) determine the abundance of species by habitat within each ecoregion; and (3) map the distribution of landbird species across Alaska. The goal of the monitoring program is to have 90% power to detect a 50% change in population size for a given species over a 25-year period. Over the last decade, cooperators from many federal and state agencies, non-governmental organizations, Native corporations, and volunteer groups have participated in an experimental effort to refine methodology. The objective of the pilot program was to determine the sources and magnitude of variability in counts and to determine the sampling effort that would be required to meet the primary objectives. Seasonal and diurnal windows that minimize variability in detections have been identified for different ecoregions. Variability among sites was the greatest contributor to variation in counts. Simulation modeling showed that repeating surveys biennially would have almost as high a power to detect long-term trends as that of annual surveys because of interannual correlation among counts at a given site. Significant variation in detectability among observers and habitats would require that counts be adjusted so that densities could be compared across space and time. A target sample of 25 points per location was identified so that initial detection levels would be high enough to detect declines statistically.

A 10-km by 10-km sampling grid has been overlaid across the state of Alaska in a geographical information system. The initial sampling frame has been defined as federal resource lands in Alaska, excluding glaciers, ice-fields, and large lakes. These resource areas encompass about 678,000 km², or 45% of the state’s land mass. An initial monitoring effort has been proposed to survey a randomly-offset grid of 25 points within each of 200 randomly selected sample blocks stratified by ecoregion and land management area. Each block will be surveyed using 10-min point-transects (variable-circular plots) once per summer on a biennial basis (100 blocks each year); habitat data will also be collected. A two-person crew could survey 6-8 grids per season during a three-week survey period with an initial two- to three-week training period. Access will be by helicopter, small plane, boat, or hike from nearest road. The estimated cost of field operations per grid for training, logistics, per diem, salary, and equipment is \$3,000. This excludes costs for planning, coordination, data management and data analysis.

Data will be collected by agency staff and volunteers and will be archived in a central on-line relational database by the USGS Alaska Science Center. Preliminary statistical analyses will be conducted by the Alaska Science Center but data will be available publicly for further analysis. Data will be analyzed using distance-sampling methodology to adjust for differences among observers and habitats. Trend data from this program will be able to be analyzed jointly with trend data from the existing roadside BBS to test for differences between roadside and roadless

areas and to increase power to detect statewide trends. The protocol has been designed so that additional grids can be surveyed for inventory or intensified monitoring within the existing sampling frame and to expand the frame to include other geographic areas as resources become available. Proposed products during the first 10 years include estimates of density and population size, measures of interannual variation in relation to weather, models of habitat use, and distribution maps. After 10 years, the first population trend estimates will be available. Long-term monitoring will enable analysis of change in distributional patterns of birds in relation to fire, forest disease, insect damage, urbanization, global climate change, and other landscape-level changes. The proposed level of effort would meet monitoring objectives for a minimum of 47 species, many at the ecoregional level. The proposed sampling design will be submitted for peer review in spring 2003 and initial grids will be field-tested in summer 2003.

Refining the Alaska Off-road Point Count Program

Steve Matsuoka, *U.S. Fish and Wildlife Service* and

Colleen Handel, *U.S. Geological Survey—Alaska Science Center*

In December 2002 and January 2003, *Boreal Partners in Flight* convened in Anchorage and Fairbanks, respectively to discuss refining the Alaska Off-road Point Count Program. The overall goal of the meetings was to identify what steps need to be taken in order to implement a broader and more statistically robust monitoring program for landbirds in Alaska. We discussed several topics including:

- Goals, methods, and updates on the Alaska Off-road Point Count Program.
- Addressing agency needs, covering costs, and developing a sound statistical design.
- Issues of scale and inference.
- The need for a formal training program.
- A pilot program for 2003.
- A formal steering committee to address high priority issues.
- Incorporating intensive inventories into the long-term monitoring design.
- The need to include habitat metrics for the structure of forested habitats (i.e., density, size, and age of trees and snags) and their topographic position (i.e., flood plain, upland, toe of slope, mid-slope, ridge).

Several excellent presentations were given on sampling design, important considerations for long-term monitoring, practical considerations when conducting random grid-based surveys in remote locations, training programs, and measuring features of forest structure. In addition, we were fortunate to have administrative representatives from Alaska Department of Fish and Game, Bureau of Land Management, National Park Service, USDA Forest Service, and U.S. Fish and Wildlife Service provide information on funding opportunities and how we could better meet the needs of the agencies. The agendas, full reports, and presentations are available on the *BPiF* website (<http://www.absc.usgs.gov/research/bpif/bpif.html>, click *PIF* meetings). Also posted on the website is an ArcView project available for downloading that contains coverages with the locations of the proposed sampling blocks and survey points throughout the state. A summary of key items discussed during the meeting follows.

A design for inventory and monitoring of landbirds.—It was proposed that we design, for interested land units, an inventory that could be completed over a 5-year period. For those land

units participating in the inventory, allocation of sampling for regional and statewide monitoring (Table 9) would initially be directed toward an intensive inventory. After the inventory is completed samples could then be rolled into the monitoring design. Monitoring could thereafter proceed at different spatial scales as follows.

- A subset of inventory routes could be resampled biennially to help estimate regional and statewide trends in population size. A subset of blocks sampled during the inventory would serve as the initial samples for long-term regional and statewide monitoring. Thus broad-scale monitoring would begin before the inventory was completed.
- Monitoring specific to individual land units could be accomplished by resampling the planning area at some specified time frame in the future (i.e. 10 – 20 years), following an identified ecological disturbance (i.e., large fires, climate change, or West Nile virus), or when state-wide/regional monitoring has identified problems within the planning area.

Table 9. Proposed allocation of biennial surveys for regional and statewide monitoring of landbirds in Alaska. Biennial surveys are divided into two groups such that 100 blocks are surveyed across the state each year.

Agency	Name	No. survey blocks	Agency	Name	No survey blocks
BLM	Nat Petroleum Reserve	22	NPS	Alagnak Wild River	0
BLM	Steese National Conserv. Area	1	NPS	Aniakchak	1
BLM	White Mts National Reserve	1	NPS	Bering Land Bridge	3
Bureau of Land Mangement Total		24	NPS	Cape Krusenstern	1
FS	Admiralty Is National Monument	1	NPS	Denali	5
FS	Chugach National Forest	6	NPS	Gates of the Arctic	9
FS	Misty Fjords National Monument	3	NPS	Glacier Bay	2
FS	Tongass National Forest	14	NPS	Katmai	4
Forest Service Total		24	NPS	Kenai Fjords	0
FWS	Alaska Maritime	6	NPS	Klondike Gold Rush NHP	0
FWS	Alaska Peninsula	5	NPS	Kobuk Valley	2
FWS	Arctic	22	NPS	Lake Clark	3
FWS	Becharof	1	NPS	Noatak	7
FWS	Innoko	6	NPS	Sitka NHP	0
FWS	Izembek	0	NPS	Wrangell-St.Elias	9
FWS	Kanuti	2	NPS	Yukon-Charley Rivers	4
FWS	Kenai	2	National Park Service Total		50
FWS	Kodiak	2	NWSR	Beaver Creek	0
FWS	Koyukuk	5	NWSR	Birch Creek	0
FWS	Nowitna	2	NWSR	Delta	0
FWS	Selawik	3	NWSR	Fortymile	1
FWS	Tetlin	1	NWSR	Gulkana	0
FWS	Togiak	6	NWSR	Unalakleet	0
FWS	Yukon Delta	25	Wild & Scenic River Total		1
FWS	Yukon Flats	13	GRAND TOTAL		200
Fish and Wildlife Service Total		101			

Funding.—Deb Nigro estimates that it costs approximately **\$3,000 to sample each survey block**. Mark Bertram independently came up with a similar estimate. Keep in mind that this does not include the costs of training, data management, analysis, and reporting.

- Some suggested that the time and costs associated with data entry could be substantially reduced if we input the data into hand-held computers in the field.
- High costs of training could be reduced if land units or agencies shared observers.
- It is estimated that data management, analysis, and reporting will probably comprise ~30% of total project costs. We may need to look for additional funds to fully support this component of the program. Karen Oakley has recommended that we begin looking toward the National Status and Trends program of the USGS.
- Short-term costs for developing training programs and buying gear could be covered by applying for the multitude of cost-sharing programs through the agencies (i.e. State Wildlife Grants, Challenge Cost Share, etc.).
- Refuge Operation Needs Support (RONS) is the best prospect for bringing new base funds to support participation by the National Wildlife Refuges. Mark Bertram (Yukon Flats NWR) has volunteered to take the lead on developing a region-wide RONS package that will request base funds for all of the Refuges in Alaska to participate in the Alaska Off-road Point Count Program.
 - Colleen will be providing Mark the number of sample blocks for each Refuge (Table 9).
 - Mark will then estimate costs for each Refuge based on this sampling allocation.
 - Estimates of costs will be distributed to each Refuge for review and comments.
 - **Proposal will be completed and submitted by the May 3, 2003 deadline.**

Pilot study for 2003.—The new random grids will be much more difficult to plan for and survey than the previous non-random routes. The group therefore agreed that a pilot effort in 2003 would be useful to evaluate the proposed design and field methods.

- A goal for the pilot program is to sample at least *5 blocks for each Bird Conservation Region* in Alaska. This will give us an idea of the difficulties associated with conducting the surveys under a wide range of conditions. Based on current interest we should be able to meet this goal for Western Alaska (BCR1), Northwestern Interior Forests (BCR4) and Northern Pacific Rainforest (BCR5).
- **If you are interested in participating in the pilot study please contact Colleen Handel at 786-3418, colleen_handel@usgs.gov.**

Increasing the relevancy of the project to the contributing agencies.—To increase the relevancy of the program to the agencies it was recommended that we link birds to management more closely through habitat mensuration and consider adding the inventory and monitoring of other taxa into our design.

- Many suggested that habitat models of species' occurrence will be an important product of the program. However, many felt that additional information would need to be collected to make the results of such models more applicable to land acquisition and

timber, fire, and wetlands management (see *Linking landbird surveys to forest management through habitat mensuration*, below).

- We should consider incorporating other taxonomic inventories and monitoring with the current design in the future.
 - For example, Carol McIntyre and Carl Roland of Denali National Park and Preserve are conducting a dual avian and floristic inventory using a systematic sample of survey grids similar to the ones proposed for the statewide program.
 - Winston Smith et al. combined avian and small mammal inventories on Research Natural Areas in southeast Alaska (see *Bird and mammal surveys of Research Natural Areas, Tongass National Forest* below).

Training.—Teaching observers the skills to conduct these surveys will require considerable training. Debbie Nigro and Michelle Kissling estimate that two weeks of training are necessary for observers to properly identify birds, estimate distances to birds, navigate in remote wilderness, log GPS locations, measure habitat, use data sheets, and work safely in aircrafts, boats, and bear country. A formal training program will undoubtedly be needed in the future. It was suggested that we should apply for grants through the various cost-sharing programs to help fund the development of a standard program for training observers. For the 2003 pilot season, training programs will be held by the Alaska Bird Observatory in Fairbanks (contact Tim Walker, twalker@alaskabird.org, for details) and U.S. Fish and Wildlife Service and Forest Service in Juneau (contact Michelle Kissling, michelle_kissling@fws.gov, and Gwen Baluss, gbaluss@fs.fed.us, for details).

Linking landbird surveys to forest management through habitat mensuration

Tom Paragi, *Alaska Department of Fish and Game* and
Robert Ott, *Tanana Chiefs Conference*

Decisions on forest management influence wildlife habitat, and planning for land management relies on biologists to characterize habitat-wildlife relationships. Bird researchers can enhance the utility of their point counts by adequately describing habitat at sampling sites so that forest managers and the public can evaluate options for where, when, and how to harvest trees. Foresters largely characterize the commercial potential of forest stands by dominant cover type (e.g., white spruce, paper birch, white spruce-aspen mix) and wood volume. Stands that grow wood >20 ft³/acre/year are considered commercial forest in interior Alaska, and merchantable trees are categorized as saw-timber (conifers >9 inch dbh, deciduous >11 inch) and pole-timber (conifers 5.0-8.9 inch dbh, deciduous 5.0-10.9 inch). In addition to standard habitat metrics collected by *BPIF*, bird researchers in the Interior should at a minimum take a representative photo of the stand with a person for scale and note landform position (floodplain or upland). Foresters can recommend procedures for estimating volume and density for both live trees and snags, the latter especially important if cavities are present. Age of the stand can be estimated with an increment borer to characterize site suitability that may be partly independent of stand structure. Please look at the presentation by Paragi and Ott on the *Boreal Partners in Flight* website (www.absc.usgs.gov/research/bpif/bpif.html, click *PIF* Meetings) for a more full treatment of this issue.

Breeding bird communities of major mainland rivers of southeast Alaska

Jim Johnson, *Utah State University*

The major mainland river of Southeast Alaska are classified as two types: (1) those that transect the coastal mountains to connect the ecologically distinct regions of southeast Alaska and the Canadian interior (trans-mountain), and (2) those rivers with watersheds limited to the seaward side of the coastal mountains (coastal). Both types contain a heterogeneous mixture of highly diverse and productive avian habitats, including the most structurally and floristically complex deciduous riparian plant communities in Alaska. Because of the scarcity of information for bird communities at the major mainland rivers of southeast Alaska, the main objective of this study was to provide baseline information on distribution, status, and habitat associations of breeding birds.

I conducted a meta-analysis of all known studies conducted at major mainland rivers during the breeding season. I described bird species composition, distribution, abundance, status, habitat associations, and guild membership for all birds recorded at 11 major mainland rivers. Based on incidental observations, a total of 170 species were recorded by all studies. Of these, 134 species were known or suspected to breed. This total (134) comprises 50% of the total breeding avifauna of Alaska and 80% of the total breeding avifauna of southeast Alaska. Bird use of the major mainland rivers is highly seasonal – the majority (69%) of breeding birds are migratory. Major mainland rivers not only support a diverse breeding avifauna but are also migratory corridors and staging areas for large numbers of landbirds, waterfowl, seabirds, and shorebirds. The complex mosaic of habitat types at the major mainland rivers support a unique avifauna including species of management concern and several species not found elsewhere in Alaska.

I used point counts to survey birds in deciduous riparian vegetation at 6 major mainland rivers during 2000-2002. I compared bird species composition, abundance, richness, and diversity among the four main vegetation types of deciduous riparian vegetation: shrubland, young deciduous forest, mature deciduous forest, and mixed deciduous-coniferous forest. Species richness was similar among all habitat types, however, relative abundance and diversity of birds was highest in mixed forests. Mature forests had the greatest number of species associated with the Canadian interior.

I also used point counts to compare bird species composition, abundance, richness, and diversity among 6 major mainland rivers consisting of three trans-mountain and three coastal rivers. Latitude, connectivity, and availability of mature and mixed forests were the major factors thought to cause differences in bird communities among rivers. Contrary to our predictions, coastal rivers had higher bird species richness, diversity, point abundance, and point richness than trans-mountain rivers. Of the 10 species associated with the Canadian interior recorded during point counts, 8 occurred at both trans-mountain and coastal rivers.

Although the major mainland rivers of Southeast Alaska are among the most intact riparian corridors in the U.S., road-building, mining, hydroelectric power development, and timber harvest threaten these systems. To successfully maintain the integrity of these riverine landscapes, careful monitoring of land use and periodic assessment of bird populations are needed. In addition, due to the connectivity of several of the major mainland rivers between the U.S. and Canada, international cooperation between land managers is integral.

Bird and mammal surveys of Research Natural Areas, Tongass National Forest

Winston Smith, *USDA Forest Service, Forestry Sciences Laboratory, Juneau* and
Matt Stotts, Brad Andres, and Julie Melton, *U.S. Fish and Wildlife Service, Migratory Bird
Management*

Taken from : Smith et al. 2001. USDA Forest Service Research Paper-PNW-RP-535: 1-44.

We surveyed bird and mammal communities on 7 Research Natural Areas (RNAs) in the Tongass National Forest (Tongass) June 1-30, 1997: Dog Island, Old Tom Creek, Rio Roberts, Kadin Island, Cape Fanshaw, West Gambier Bay, and Limestone Inlet. Abundance and breeding status of birds were recorded during systematic searches of different habitats on a time-available basis. Survey effort in each area-day (plot) was recorded as number of person-hours computed as the sum of hours surveyed by each individual, or $1.5 \times$ the hours surveyed by a 2-person team assuming that the added sampling efficiency of a second person was 50 percent of a single individual. Person-hours were summed across days to compute total effort; ≥ 13.5 person-hours of effort occurred in each RNA. Plots were delineated on 7.5-minute U.S. Geological Survey topographic maps. Birds recorded during checklist surveys were assigned to 1 of 4 breeding categories: observed, possible, probable, or confirmed (North American Ornithological Atlas Committee 1990). In each RNA, the highest recorded rank established the breeding status of a species. Abundance was summarized according to categories that generally followed Allen (1993), but were modified to reflect the abundance of birds in RNAs. We added a category (occasional) for species whose average abundance ranged 0 - 0.33 birds/day (Andres 1995).

A series of point stations were established with a compass and pacing along each transect. Transect locations were selected to maximize variation in aspect, elevation, and major vegetation covertypes. Point stations were spaced along transects at 250-m intervals and ranged from eight to 11 points. Terrain often limited points surveyed during the 5-hr period following sunrise. All points were located ≥ 250 m from shoreline to reduce edge effects. A standardized point count protocol was used to sample all RNAs (Hamel et al. 1996). At each point, the same observer recorded all bird species, heard or seen, during a 10-min period. Individuals detected < 50 m, > 50 m, and overhead (i.e., flyovers) were recorded separately at intervals of 0-3, 3-5, and 5-10 min. Number of detections at each point was used to estimate mean density (birds/point) and standard error of each species.

Habitat features were measured at a subset of point-count stations. Quadrat plots comprising 288 m² were established around selected points. Points along each cardinal direction defined the perimeter of each plot 12 m from the center. Plots were marked with flagging, an aluminum tree tag, and GPS coordinates. Elevation (from topographic maps), slope, and aspect were recorded. Each plot was assigned to a plant community type according to association guides for corresponding portions of the Tongass National Forest: Ketchikan Area (Demeo et al. 1992); Stikine (Pawuk and Kissinger 1989); and Chatham Area (Martin et al. 1995). We used Viereck et al. (1992) and Pojar and MacKinnon (1994) as additional references for vegetation classification and distribution in the Pacific Northwest and Alaska. Plant associations were combined into 2 overstory covertypes to facilitate summarizing the habitat distribution of birds. Vegetation measurements generally followed Hamel et al. (1996), or those recorded by DellaSala et al. (1996).

The small mammal sampling protocol was adapted from the procedures of MacDonald and Cook (1996). A trap line was established along each avian transect. Trap lines began at point station 1 with 2 museum special snap traps and continued for about 1.25 km to point station 6 with 2 traps/station at about 10-m spacing. Large (7.6 × 8.9 × 22.9 cm) folding live traps and galvanized, cone pitfall traps (15 cm × 27.5 cm) were alternated systematically to replace museum special snap traps as the second trap at every other trap station. Thus, each trap line was comprised of 125 trap stations with 31 folding live-traps, 31 cone pitfall traps and 188 museum special snap traps. Trap stations were assigned a plant community type according to association guides for corresponding portions of the Tongass. Snap traps were baited with a mixture of oatmeal and peanut butter; folding live traps were baited with dry oatmeal. Typically, trap lines were established and baited during the morning of the first day and maintained over two nights, totaling 500 trap nights of effort per transect.

Breeding status and abundance of 65 bird species were recorded. Number of bird species among RNAs ranged 22 - 41 with a median of 37. Percentage of confirmed breeders ranged 36 – 51 percent with a median of 39 percent. The largest number of bird species was recorded in Dog Island RNA, whereas Old Tom Creek RNA had the largest proportion of confirmed breeders. Checklist surveys were more effective than point counts in generating a comprehensive list of birds for each RNA. Variation in bird species composition among RNAs was related to habitat features, latitude, or geographical location, especially juxtaposition to a marine environment. A total of 331 small mammals representing six species were captured with an additional five species documented from visual observations or physical evidence. Both relative abundance and species richness of captures were highest in Limestone Inlet RNA and lowest in Kadin Island RNA. The Keen's mouse was the numerical dominant species comprising 66 percent of total small mammal captures.

Analysis of 10 years (1992-2001) of data from the Monitoring Avian Productivity and Survivorship (MAPS) program in Alaska and adjacent Canada

David DeSante and Danielle Kaschube, *Institute of Bird Populations*

Scott Sillett, *Smithsonian Institute*

Joel Schmutz and Karen Oakley, *U.S. Geological Survey—Alaska Science Center*

Steve Matsuoka, *U.S. Fish and Wildlife Service, Migratory Bird Management*

For each of five target species (Hermit Thrush, Orange-crowned and Wilson's warblers, Fox Sparrow, and Dark-eyed Junco), we used a) modified Cormack-Jolly-Seber mark-recapture analyses (program MARK) to model apparent adult survival rates and recapture probabilities, and b) logistic regression to model productivity (proportion of young in the catch) after correcting for missed effort. Only four stations were operated for all 10 years while another four were operated for only one year; the mean number of years of operation/station was 5.73.

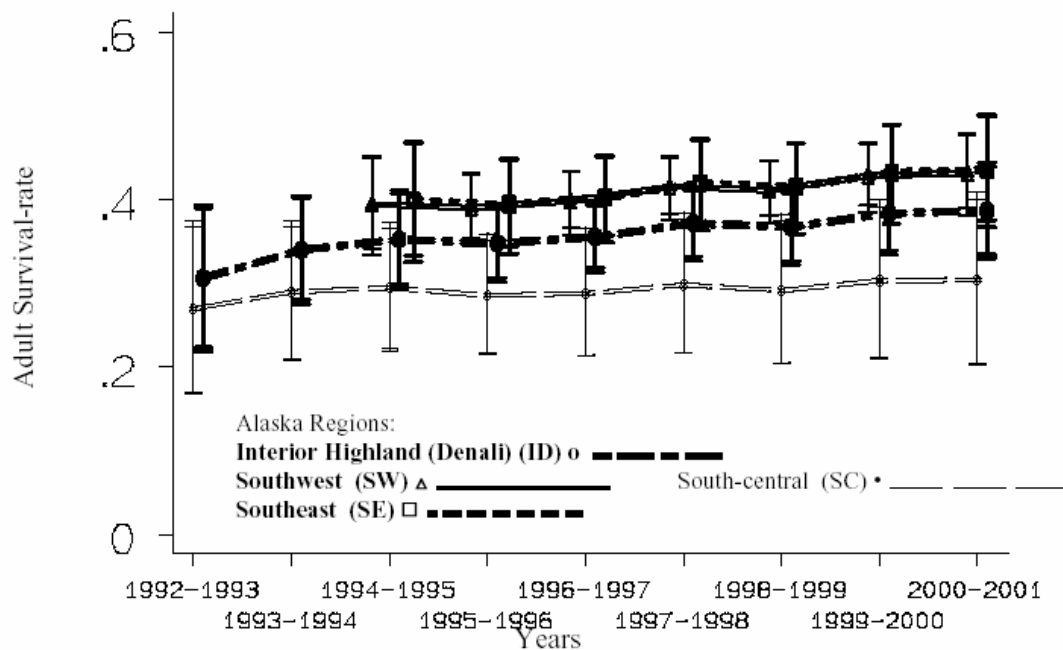
We modeled time and geographic variation, and time and habitat variation, in survival and used Akaike's Information Criteria and model averaging. Recapture probabilities for all five species were best modeled as a function of sex (QAICC weights varied from 1.00 to 0.45). We also found support for sex-specific survival for Orange-crowned Warbler (QAICC weight = 0.49) and Dark-eyed Junco (QAICC weight = 0.62). For Wilson's Warbler survival, we found very strong support for a positive linear trend (QAICC weight = 1.00) and for spatial variation at the scale of five Alaska regions (QAICC weight = 0.81, Figure 3). We found very little support for time

variation (QAICC weights from 0.26 to 0.12) or geographic variation (QAICC weights from 0.17 to 0.05) in survival for the other four species, or habitat variation (QAICC weights from 0.23 to 0.01) in survival for any of the five species. Despite the lack of support for models of geographic variation for four of the species, those models produced survival rates in the South-central Alaska Region (Anchorage area) that were lower than those in every other region for four of the species and only slightly higher than the lowest for Dark-eyed Junco.

Significant temporal (year), spatial (at four spatial scales varying from the sub-region to the individual station), and habitat variation was found for productivity for all five species, with productivity in 1995, 1996, 1999, and 2000; in the Southeast and South-central Alaska regions; and in coniferous forest habitat often being significantly lower than in other years, regions and habitats. Productivity for Wilson's Warbler was significantly positively correlated with the El Niño/Southern Oscillation Precipitation Index (ESPI), such that higher productivity occurred during El Niño years.

Additional species are currently being analyzed in similar fashion. The final report will be distributed to the members of *Boreal Partners in Flight* late Spring 2003.

Figure 3. Temporal and spatial variation in survival of Wilson's Warbler, Alaska 1992-2001.



A summary of bird banding activities in Alaska, 2002

Tim Walker, *Alaska Bird Observatory*

The following tables summarize the number of birds banded in 2002 by area, species and age as part of the Monitoring Avian Productivity and Survivorship (MAPS) program, migration monitoring, and miscellaneous inventory, education, and research efforts.

Table 10. Summary of birds banded for the MAPS Program in Alaska, 2002.

BIOREGION:	Southeastern				Southeastern				Southcoastal			
SITE NAME:	Hoonah				Mendenhall				Yakutat			
CONTACT/AFFILIATION:	Gwen Baluss, USFS				Gwen Baluss, USFS				Gwen Baluss, USFS			
Number of Stations	1				1				1			
No. days banding:	8				7				7			
Range of dates:	1 June - 31 July				5 June - 1 August				7 June - 5 August			
No. net-hours:	356				386				420			
SPECIES	HY	AHY	UNK	TOT	HY	AHY	UNK	TOT	HY	AHY	UNK	TOT
Rufous Hummingbird	2	8		10	2	2		4				
Red-breasted Sapsucker		3		3								
Downy Woodpecker									1			1
Three-toed Woodpecker												
Olive-sided Flycatcher		2		2								
Alder Flycatcher						1		1				
Pacific-slope Flycatcher		6		6		1		1				
Gray Jay												
Black-capped Chickadee												
Boreal Chickadee												
Chestnut-backed Chickadee		5		5		1		1	9	4		13
Brown Creeper	1	3		4						1		1
Winter Wren	1	2		3	1			1				
Arctic Warbler												
Golden-crowned Kinglet										1		1
Ruby-crowned Kinglet	3	14		17	17	12		29	7	8		15
Gray-cheeked Thrush												
Swainson's Thrush						2		2				
Hermit Thrush	2	13		15	3	5		8	25	12		37
American Robin		1		1	3			3		4		4
Varied Thrush		8		8	5			5	4	4		8
Orange-crowned Warbler	3	14		17	14	8		22	19	20	1	40
Yellow Warbler					2	2		4		7		7
Myrtle Warbler					4	3		7	1	2		3
Townsend's Warbler	2	4		6	15	2		17				
Wilson's Warbler	3	6		9	2	13		15	24	26		50
American Tree Sparrow												
Savannah Sparrow												
Fox Sparrow		2		2					11	7		18
Song Sparrow									3			3
Lincoln's Sparrow	5	3		8					29	8		37
Golden-crowned Sparrow												
White-crowned Sparrow												
Slate-colored Junco												
Oregon Junco	2	7		9	11	6		17	1	2		3
Pine Grosbeak		2		2						1		1
White-winged Crossbill												
Common Redpoll												
Unknown <i>Catharus</i> Thrush					3			3				
Unknown Yellow-rumped Warb.					3			3				
TOTAL OF ALL SPECIES	24	103	0	127	85	58	0	143	134	107	1	242
CAPTURE RATE (#/100nh)	6.7	28.9	0.0	35.6	22.0	15.0	0.0	37.1	31.9	25.5	0.2	57.6

Table 10. Continued.

BIOREGION:	Southcentral				Central				TOTAL			
SITE NAME:	GIRD				Denali National Park							
CONTACT/AFFILIATION:	Aaron Poe, USFS				Danielle Kaschube, IBP							
Number of Stations	2 (JOPA, POVA)				4				9			
No. days banding:	12				27							
Range of dates:	13 June - 1 Aug				10 June - 3 Aug							
No. net-hours:	720				1,225							
SPECIES	HY	AHY	UNK	TOT	HY	AHY	UNK	TOT	HY	AHY	UNK	TOT
Rufous Hummingbird									4	10		14
Red-breasted Sapsucker										3		3
Downy Woodpecker									1			1
Three-toed Woodpecker			1	1						1		1
Olive-sided Flycatcher										2		2
Alder Flycatcher			1	1						2		2
Pacific-slope Flycatcher										7		7
Gray Jay					5	7		12	5	7		12
Black-capped Chickadee	5			5	13	3		16	18	3		21
Boreal Chickadee	3	3		6	3		1	4	6	3	1	10
Chestnut-backed Chickadee									9	10		19
Brown Creeper									1	4		5
Winter Wren									2	2		4
Arctic Warbler					20	13	1	34	20	13	1	34
Golden-crowned Kinglet										1		1
Ruby-crowned Kinglet	10	14		24					37	48		85
Gray-cheeked Thrush						1		1		1		1
Swainson's Thrush	1	6	1	8	5	13		18	6	21	1	28
Hermit Thrush	9	19		28	4	8		12	43	57		100
American Robin									3	5		8
Varied Thrush	3	5		8		5		5	12	22		34
Orange-crowned Warbler	16	38		54	35	17		52	87	97	1	185
Yellow Warbler		1		1					2	10		12
Myrtle Warbler	5	12		17	4	11		15	14	28		42
Townsend's Warbler	4	4		8					21	10		31
Wilson's Warbler		28		28	83	35	1	119	112	108	1	221
American Tree Sparrow					44	5		49	44	5		49
Savannah Sparrow		1		1	5			5	5	1		6
Fox Sparrow	1	21		22	6			6	18	30		48
Song Sparrow									3			3
Lincoln's Sparrow						1		1	34	12		46
Golden-crowned Sparrow	1	2		3					1	2		3
White-crowned Sparrow					51	28	1	80	51	28	1	80
Slate-colored Junco	12	3		15	33	19	6	58	45	22	6	73
Oregon Junco									14	15		29
Pine Grosbeak										3		3
White-winged Crossbill						9		9		9		9
Common Redpoll		6		6	12	16		28	12	22		34
Unknown <i>Catharus</i> Thrush									3			3
Unknown Yellow-rumped Warb.									3			3
TOTAL OF ALL SPECIES	70	165	1	236	323	191	10	524	636	624	12	1,272
CAPTURE RATE (#/100nh)	9.7	22.9	0.1	32.8	26.4	15.6	0.8	42.8				

Table 11. Summary of birds banded during migration monitoring in Alaska, 2002.

BIOREGION:	Southcentral	Central	Central									
SITE NAME:	Campbell Tract	Creamer's Field	Denali Institute									
CONTACT/AFFILIATION:	Bruce Seppi, BLM	Carol Erwin, ABO	ABO									
Range of dates:	15 Aug-18 Sept	15 July - 23 Sept	31 May - 7 Sept									
Number of days:	20	61	33									
No. net-hours:	923	11,355	2,133									
SPECIES	HY	AHY	UNK	TOT	HY	AHY	UNK	TOT	HY	AHY	UNK	TOT
Sharp-shinned Hawk					5	2		7				
Solitary Sandpiper					2			2				
Wilson's Snipe					2	1		3				
Belted Kingfisher									1			1
Downy Woodpecker	2			2								
Hairy Woodpecker												
Three-toed Woodpecker						1		1	1			1
Northern Flicker												
Yellow-shafted Woodpecker									1			1
Olive-sided Flycatcher									1			1
Western Wood-Pewee									1			1
Alder Flycatcher	9	2		11	28	16		44	26	3		29
Hammond's Flycatcher					36	1	1	38	4			4
Gray Jay						1		1	7			7
Black-capped Chickadee	81	17	1	99	33	1	1	35	8			8
Boreal Chickadee	19			19	6			6	3			3
Brown Creeper	2			2								
Arctic Warbler									8	1		9
Golden-crowned Kinglet	2	2		4								
Ruby-crowned Kinglet	80	3		83	26			26	68	5		73
Gray-cheeked Thrush					12	1		13	19	1		20
Swainson's Thrush	5			5	36	3		39	38	1		39
Hermit Thrush	68	3		71	22	1		23	12	4		16
American Robin	2			2	14			14	5	1		6
Varied Thrush	1			1	5			5	5	2		7
Bohemian Waxwing									2	4		6
Northern Shrike					3			3				
Orange-crowned Warbler	47	2		49	174	25		199	44	5	1	50
Yellow Warbler	55	6		61	54	11		65	12	1		13
Myrtle Warbler	34	7		41	646	45	2	693	106	8		114
Townsend's Warbler	1			1	2			2				
Western Palm Warbler						1		1				
Blackpoll Warbler	2			2	21			21	29	2		31
Northern Waterthrush	3			3	54	3		57	38	2		40
Wilson's Warbler	56	2		58	45	2		47	354	15	2	371
American Tree Sparrow	3			3	394	25	2	421	39	3		42
Savannah Sparrow					47	1		48	3	1		4
Fox Sparrow	15			15	19	3		22	8	4		12
Lincoln's Sparrow	9	1		10	172	2		174	10	1		11
Golden-crowned Sparrow	19	1		20					1			1
White-crowned Sparrow	3			3	32	7		39	125	9		134
Slate-colored Junco	328	28		356	503	22	2	527	35	4		39
Rusty Blackbird					6	2		8				
Pine Grosbeak												
White-winged Crossbill									4			4
Common Redpoll		3		3	2	1		3	1	1		2
Pine Siskin					1			1				
TOTAL OF ALL SPECIES	846	77	1	924	2,402	178	8	2,588	1,019	78	3	1,100
CAPTURE RATE (#/100nh)	91.7	8.3	0.1	100.1	21.2	1.6	0.1	22.8	47.8	3.7	0.1	51.6

Table 11. Continued.

BIOREGION:	Central				Total			
SITE NAME:	Pump Station, Tetlin NWR							
CONTACT/AFFILIATION:	Bud Johnson, USFWS							
Range of dates:	30 July - 23 August							
Number of days:	49							
No. net-hours:	5,882				20,293			
SPECIES	HY	AHY	UNK	TOT	HY	AHY	UNK	TOT
Sharp-shinned Hawk	6	2		8	11	4		15
Solitary Sandpiper					2			2
Wilson's Snipe					2	1		3
Belted Kingfisher					1			1
Downy Woodpecker		2		2	2	2		4
Hairy Woodpecker		2		2		2		2
Three-toed Woodpecker	2		1	3	3	2	1	6
Northern Flicker	1	1		2	1	1		2
Yellow-shafted Woodpecker					1			1
Olive-sided Flycatcher					1			1
Western Wood-Pewee					1			1
Alder Flycatcher	31	16		47	94	37		131
Hammond's Flycatcher	2			2	42	1	1	44
Gray Jay	2	1		3	9	2		11
Black-capped Chickadee	3	1		4	125	19	2	146
Boreal Chickadee	21			21	49			49
Brown Creeper					2			2
Arctic Warbler					8	1		9
Golden-crowned Kinglet					2	2		4
Ruby-crowned Kinglet	313	25		338	487	33		520
Gray-cheeked Thrush	32	8		40	63	10		73
Swainson's Thrush	334	32		366	413	36		449
Hermit Thrush	27	4		31	129	12		141
American Robin	22	10		32	43	11		54
Varied Thrush	22	7		29	33	9		42
Bohemian Waxwing					2	4		6
Northern Shrike					3			3
Orange-crowned Warbler	73	27		100	338	59	1	398
Yellow Warbler	12	20		32	133	38		171
Myrtle Warbler	145	40		185	931	100	2	1,033
Townsend's Warbler	2			2	5			5
Western Palm Warbler						1		1
Blackpoll Warbler	5	1		6	57	3		60
Northern Waterthrush	10	7		17	105	12		117
Wilson's Warbler	136	34		170	591	53	2	646
American Tree Sparrow	25	1		26	461	29	2	492
Savannah Sparrow	13			13	63	2		65
Fox Sparrow	62	7		69	104	14		118
Lincoln's Sparrow	7	3		10	198	7		205
Golden-crowned Sparrow					20	1		21
White-crowned Sparrow	9	3		12	169	19		188
Slate-colored Junco	754	78	1	833	1,620	132	3	1,755
Rusty Blackbird					6	2		8
Pine Grosbeak	1			1	1			1
White-winged Crossbill		27		27	4	27		31
Common Redpoll	1			1	4	5		9
Pine Siskin	1	4		5	2	4		6
TOTAL OF ALL SPECIES	2,074	363	2	2,439	6,341	696	14	7,051
CAPTURE RATE (#/100nh)	35.3	6.2	0.0	41.5	31.2	3.4	0.1	34.7

Table 12. Summary of birds banded during research and demonstration banding in Alaska, 2002.

BIOREGION:	Southeast	Southcoastal	Central	Southwest
SITE NAME:		Cook Inlet	Creamer's Field	Bristol Bay School
CONTACT:	Gwen Baluss	Colleen Handel	Carol Erwin	Susan Savage
Affiliation:	USFS	USGS	ABO	USFWS
Type of Banding:	Training & Demo	Research	Training	Demo
No. days banding:	10	89	1	1
Range of dates:	18 April-29 May, 28 Sept.	14 Jan-16 Dec	16-Jul	23-May
No. net-hours:	63			13
SPECIES	HY AHY TOT	HY AHY UNK TOT	AHY	AHY
Sharp-shinned Hawk				
Lesser Yellowlegs				
Solitary Sandpiper				
Spotted Sandpiper				
Semipalmated Sandpiper				
Downy Woodpecker				
Three-toed Woodpecker				
Red-breasted Sapsucker				
Alder Flycatcher				
Hammond's Flycatcher				
Tree Swallow				
Pine Grosbeak				
Gray Jay				
Black-capped Chickadee		523 360 27 910		
Boreal Chickadee		69 28 1 98		
Chestnut-backed Chickadee	2 2			
Red-breasted Nuthatch		82 28 5 115		
Winter Wren	2 2			
Ruby-crowned Kinglet	8 8			
Gray-cheeked Thrush				
Swainson's Thrush				
Hermit Thrush	1 1 2			
American Robin			1	1
Varied Thrush	2 2			
Cliff Swallow				
Orange-crowned Warbler	1 1			
Yellow Warbler				
Myrtle Warbler				
Townsend's Warbler	1 1			
Blackpoll Warbler				
Northern Waterthrush				
Wilson's Warbler	8 8			2
American Tree Sparrow				
Savannah Sparrow				
Fox Sparrow	8 8			1
Lincoln's Sparrow	3 3			
Golden-crowned Sparrow	6 6			
White-crowned Sparrow	2 2			
Slate-colored Junco				
Oregon Junco	11 11			
Rusty Blackbird				
Common Redpoll		0 86 0 86		7
Hoary Redpoll				
Pine Siskin	10 10	0 1 0 1		
TOTAL OF ALL SPECIES	1 66 67	674 503 33 1210	1	11
CAPTURE RATE (#/100nh)	33.0 104.8 106.3			86.8

Table 12. Continued.

BIOREGION:	Southwest	Western	Central	Central
SITE NAME:	Bible Camp	Old Woman/Anvik Rivers	Creamer's Field	Eielson AFB/Bonanza Cr.
CONTACT:	Susan Savage	Bruce Seppi	Carol Erwin	Kristen Bartecchi
Affiliation:	USFWS	BLM	ABO	ABO
Type of Banding:	Demo	Misc breeding	Research	Research
No. days banding:	1	3	8	
Range of dates:	5-Sep	4, 28-29 June	28 May - 22 June	21 May - 7 July
No. net-hours:	6	330		
SPECIES	HY AHY TOT	HY AHY TOT	HY AHY TOT	AHY UNK TOT
Sharp-shinned Hawk				
Lesser Yellowlegs				
Solitary Sandpiper				
Spotted Sandpiper		3	3	
Semipalmated Sandpiper		1	1	
Downy Woodpecker				
Three-toed Woodpecker				
Red-breasted Sapsucker				
Alder Flycatcher		2	2	
Hammond's Flycatcher				
Tree Swallow			51 15 66	
Pine Grosbeak		1	1	
Gray Jay		2 3	5	
Black-capped Chickadee		2	2	
Boreal Chickadee				
Chestnut-backed Chickadee				
Red-breasted Nuthatch				
Winter Wren				
Ruby-crowned Kinglet		2	2	
Gray-cheeked Thrush				
Swainson's Thrush		13	13	
Hermit Thrush	1			
American Robin		1	1	
Varied Thrush		1	1	
Cliff Swallow		3	3	
Orange-crowned Warbler		1	1	
Yellow Warbler		9	9	
Myrtle Warbler		9	9	23
Townsend's Warbler				18
Blackpoll Warbler		4	4	
Northern Waterthrush		31	31	
Wilson's Warbler	1	7	7	
American Tree Sparrow	3			
Savannah Sparrow				
Fox Sparrow	1	2	2	
Lincoln's Sparrow				
Golden-crowned Sparrow		2	2	
White-crowned Sparrow		2	2	
Slate-colored Junco	1	2	2	4 1 5
Oregon Junco				
Rusty Blackbird				
Common Redpoll				
Hoary Redpoll				
Pine Siskin				
TOTAL OF ALL SPECIES	5 2 7	2 99 101	51 15 66	45 1 46
CAPTURE RATE (#/100nh)	83.3 33.3 116.7	0.6 30.0 31.0		

Table 12. Continued.

BIOREGION:	Central	Central	Total			
SITE NAME:	Creamer's Field	Creamer's Field				
CONTACT:	Carol Erwin	Carol Erwin				
Affiliation:	ABO	ABO				
Type of Banding:	Spring Banding	Summer Banding				
No. days banding:	38	7				
Range of dates:	25 April - 7 June	13 June- 11 July				
No. net-hours:	5,742	1,079				
SPECIES	HY AHY UNK TOT	HY AHY TOT	HY AHY UNK TOT			
Sharp-shinned Hawk				1		1
Lesser Yellowlegs				1		1
Solitary Sandpiper	3		1	4		4
Spotted Sandpiper				3		3
Semipalmated Sandpiper				1		1
Downy Woodpecker	2			2		2
Three-toed Woodpecker	1			1		1
Red-breasted Sapsucker				1		1
Alder Flycatcher		1	1	1	2	3
Hammond's Flycatcher	5	2	2	4	7	9
Tree Swallow				51	15	66
Pine Grosbeak					1	1
Gray Jay		1	1	3	3	6
Black-capped Chickadee	5	5	1	528	368	931
Boreal Chickadee				69	28	98
Chestnut-backed Chickadee					2	2
Red-breasted Nuthatch				82	28	115
Winter Wren					2	2
Ruby-crowned Kinglet					10	10
Gray-cheeked Thrush	6				6	6
Swainson's Thrush	11	3	7	3	31	34
Hermit Thrush	4			1	6	7
American Robin	32	1	11	1	46	47
Varied Thrush					3	3
Cliff Swallow					3	3
Orange-crowned Warbler	12	3	3	3	17	20
Yellow Warbler	2		4		15	15
Myrtle Warbler	25		3		60	60
Townsend's Warbler					19	19
Blackpoll Warbler					4	4
Northern Waterthrush	9		1		41	41
Wilson's Warbler	2			1	19	20
American Tree Sparrow	4			3	4	7
Savannah Sparrow	2				2	2
Fox Sparrow	1				13	13
Lincoln's Sparrow	1	11	1	11	5	16
Golden-crowned Sparrow					6	6
White-crowned Sparrow	8	2	4	2	16	18
Slate-colored Junco	14	9	6	10	26	37
Oregon Junco					11	11
Rusty Blackbird	1				1	1
Common Redpoll	18	2	1	20	250	271
Hoary Redpoll	11				11	11
Pine Siskin					10	10
TOTAL OF ALL SPECIES	18	40	45	791	1,105	1,939
CAPTURE RATE (#/100nh)	0.3	3.7	4.2			

BIRD CONSERVATION

Northwestern Interior Forests; Arctic Plain and Mountains

John Wright, *Alaska Department of Fish and Game*

Large-scale commercial harvest of white spruce and other forest products is considered by many to be an impending impact in central Alaska, especially within the Tanana Valley State Forest and adjacent Native lands. In 2002, a 2-year project was initiated to determine the abundance of selected passerines in undisturbed and managed white spruce and aspen forests, and to describe the habitat variables selected by passerines in spruce forests near Fairbanks. This project was undertaken by the Alaska Bird Observatory (ABO) with funding through the Alaska Department of Fish and Game with support from the U. S. Fish & Wildlife Service and the Ruffed Grouse Society. In summer 2002, 247 randomly selected variable-circle point counts were conducted in spruce forests and 174 points were surveyed in aspen forest. Initial results found Yellow-rumped Warbler, Townsend's Warbler, Swainson's Thrush, Dark-eyed Junco, Boreal Chickadee and Gray Jay most frequently in spruce forests. The Varied Thrush, a target species along with Townsend's Warbler, were detected at all 3 sites but in small numbers. In aspen forest, Dark-eyed Junco, Yellow-rumped Warbler, and Swainson's Thrush were the most frequently detected species, with relative abundance differing in managed vs. undisturbed stands. Overall, more species and more individuals were detected in managed stands. Another season of field work is planned for 2003. In addition, ABO has proceeded with development of an Interior Forest Bird/Habitat Model. The predictive model is currently under review and refinement.

Northwest Pacific Rainforest

Michelle Kissling, *U.S. Fish and Wildlife Service, Juneau Field Office*

Whitehorse Meeting. *Melissa Cady, USDA Forest Service-Tongass National Forest.*

Members of *Boreal Partners in Flight* met in Whitehorse, Yukon Territory, Canada, on October 10, 2002, to discuss the conservation of landbirds on the Tongass National Forest. Participants included:

Gwen Baluss, Tongass National Forest, Juneau Ranger District
Melissa Cady, Tongass National Forest, Wrangell Ranger District
Ellen Campbell, USFS, Alaska Region, Juneau
Gene DeGayner, USFS, Alaska Region, Petersburg
Meg Hahr, Klondike Goldrush National Historical Park, Skagway

Jim Johnson, Utah State University
Michelle Kissling, USFWS, Juneau
Steve Matsuoka, USFWS, Anchorage
Mary Rabe, ADFG, Juneau

Meeting participants discussed potential studies and their benefits and drawbacks as applied to issues relevant to the management of the Tongass National Forest. Methods discussed included:

General monitoring of biodiversity and abundance

- BBS
- Alaska Off-road Point Count Program
- MAPS

Studies focused on evaluating management practices

- Evaluating beach buffer width
- Monitoring avian responses to second growth thinning treatments
- Monitoring avian responses to partial harvest and variable retention prescriptions

- Selecting and monitoring Management Indicator Species (MIS)
- Other possible single species studies

A detailed summary of the BCR 5 break-out meeting is available from Melissa Cady, USDA Forest Service (PH: 907-772-3841, EM: mcady@fs.fed.us).

2002 Activities

BBS routes – Routes were conducted on Chichagof Island, Yakutat, and a new route was established along the Stikine River.

Off-road Point Count Program – Point count surveys were only conducted at a few locations in 2002. Two routes near the Mendenhall Recreation area, one route on Chichagof Island, two routes near Skagway, and several routes in the Wrangell area were completed.

MAPS – The Juneau, Hoonah, and Yakutat MAPS stations were operated in 2002.

Beach buffer study – In 2000, a study was initiated to evaluate the current beach buffer prescription for landbirds in the Tongass National Forest. A second and final field season was conducted in 2002, and a final report will be available in May 2003. *Primary investigator*: Michelle Kissling, USFWS.

Avian inventory of major mainland rivers – In 1999, the U.S. Fish and Wildlife Service entered into agreement with Utah State University to collect landbird information along the major mainland rivers of southeast Alaska. A third and final field season was completed in 2002, and a final report will be available in August 2003. *Primary investigator*: Jim Johnson, Utah State University.

Northern Goshawk research – The Alaska Department of Fish and Game continued work on analysis of morphological data, nesting habitat, and survival. Each of these will be written as a manuscript. In addition, ADFG and the U.S. Forest Service checked occupancy of selected goshawk nests during the 2002 breeding season. The Forest Service also surveyed a few areas prior to proposed timber sales. *Primary investigators*: Steve Lewis, ADFG, and Gwen Baluss, USFS.

Landbird inventory of Klondike Gold Rush Historic Park – The National Park Service began to compile historic and current observations of species recorded in the park. Five new species were added to the comprehensive species list. *Primary investigator*: Meg Hahr, NPS.

Educational programs – The USFS continues to lead public education efforts in Southeast Alaska. Gwen Baluss, USFS, participated in classroom activities, as well as bird walks and banding demonstrations. USFS and USFWS held an International Migratory Bird Day event at the Mendenhall Glacier Visitor Center.

Plans for 2003

Alaska Off-road Point Count Program – The USFS plans to participate in a pilot study that will determine the feasibility of monitoring landbirds and random locations in Alaska. A

subsample of the sites (5 blocks) will be attempted in 2003. The USFS is working with USFWS to launch an appropriate training program for surveying landbirds in coastal forests.

MAPS – The USFS plans to operate the Juneau MAPS station in 2003.

Beach buffer study – The USFWS is working closely with Dave Sperry and Luke George of Humbolt State University on a study that will evaluate the nesting success of landbirds relative to the width of beach buffers on the Tongass National Forest. This study will use the same sampling design as Michelle Kissling's previous study. Simultaneously, USFWS will conduct point counts at selected study sites. Cooperators include Humbolt State University, USFWS, USFS, and the Forestry Science Lab in Juneau. Proposals have been submitted but grants have not yet been awarded.

Educational programs – As usual, *BPIF* members will continue public education efforts relating to landbird conservation. All agency personnel will work closely to evenly distribute responsibilities.

Primary cavity excavators – The USFWS has proposed to develop a monitoring protocol for primary cavity excavators in southeast Alaska. Proposals have been submitted but grants have not yet been awarded.

Klondike Gold Rush Historic Park landbird inventory – The NPS is launching an effort to inventory birds in Klondike Gold Rush Historic Park. Meg Hahr, NPS-Skagway, is looking for qualified volunteers to assist in the effort.

Analysis of bird-habitat relationships – Steve Lewis, ADFG, is working closely with USFWS and USFS to analyze a data set collected by Chris Iverson (USFS) in the early to mid 1990's. Point count data was collected, as well as extensive vegetation data, in the Petersburg area. These data will be used to investigate bird-habitat relationships and results will be related to goshawk management and prey availability.

Forest management – *BPIF* members from Southeast Alaska agree that benefits of second growth forest management and partial retention harvesting for breeding birds should be investigated. The BCR 5 working group hopes to further develop these ideas during the upcoming year.

Black swifts – Bob Altman, American Bird Conservancy, is submitting a proposal requesting funds to conduct an inventory of black swifts throughout BCR 5 (southeast Alaska south to N. California). The USFS has preliminary plans to conduct the inventory in southeast Alaska, but funding is questionable. Ellen Campbell, USFS, is the primary contact.

Additional note – Gail Hall, graduate student at Syracuse University, completed a study in 2001 on Heceta Island. Her thesis is titled, "Effects of even-aged timber management on the breeding forest bird community in the northern temperate rainforests of Southeastern Alaska". Gail was not associated with an agency, or an active member of *BPIF*, and therefore, her results were not widely publicized. If you would like a copy of her thesis,

please email or telephone me (michelle_kissling@fws.gov or 907-586-7242). You can also receive a copy of her thesis through inter-library loan from Syracuse University.

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